

JUNE '57

# MODERN TEXTILES

MAGAZINE

*Specializing in Man-Made Fibers and Blends since 1925*

FIBERS

FABRICS

FINISHES



*Good friends of  
gray goods  
weavers--GEORGE  
TARSHES (left)  
and IRVING  
ROAMAN--  
Story page 31*

## THIS MONTH'S SPECIAL FEATURES

All about metallic yarns

Wanted: more imagination

Nylon today in tire cord

Better vat dye printing

Non-wovens in Europe

AND 15 MORE TIMELY ARTICLES AND EXCLUSIVE REPORTS



England

**'NELSON'**  
*does it again*

Large installation of  
'NELSON' rayon  
spinning machines  
now ordered by  
CELULOSA Y DERIVADOS  
MONTERREY  
MEXICO

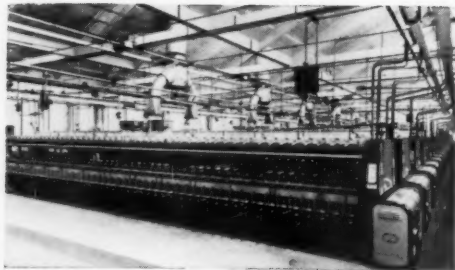


and FINLAND orders  
additional machines

Finland



Italy



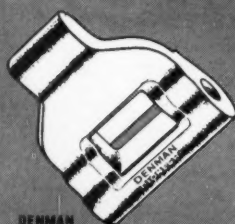
Compact and labour saving, simple to operate,  
easy to maintain—'NELSON' machines are  
proving themselves daily as the  
world's finest continuous spinners.

'NELSON' RAYON SPINNING  
MACHINES ARE SPINNING  
EXTENSIVELY IN ENGLAND AND IN  
ELEVEN RAYON PRODUCING  
COUNTRIES ABROAD

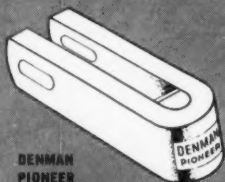
PATENTS. The "Nelson" rayon continuous spinning machine and process are protected by patents granted to Messrs. Lustrafil Limited, from whom Messrs. Dobson & Barlow Ltd. have exclusive manufacturing rights.

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MACHINERY SALES LTD BOLTON**

MARKETING THE FULL RANGE OF VISCOSE RAYON MANUFACTURED BY DOBSON & BARLOW LTD. BOLTON



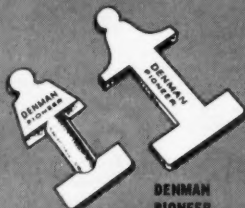
DENMAN  
PIONEER  
DROP BOX REVERSIBLE PICKER



DENMAN  
PIONEER  
LUG STRAP



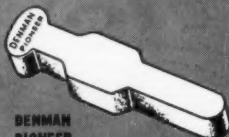
DENMAN  
PIONEER  
SWEEPSTICK



DENMAN  
PIONEER  
HOLD-UP STRAP



DENMAN  
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SPINDLE ROD BUMPER



DENMAN  
PIONEER  
DOLL PICKER



DENMAN  
PIONEER  
BOBBIN STRIPPER BLADE



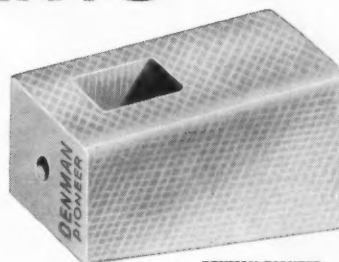
SPECIFY  
THE  
ORIGINAL

# Denman

## PIONEER LOOM PARTS

*Compounded For Smooth,  
Dependable Performance . . .*

*Longer Life And Greater  
Resistance To Shock!*



DENMAN PIONEER  
LOOP PICKER

For more than 20 years Original Denman Pioneer Loom Parts have set new standards for smooth, dependable performance. They are scientifically designed and moulded to absorb repeated loom shocks with little or no adjustment . . . need replacement only after longer-than-average service. To cut costs, step up production, specify Original Denman Pioneer Loom Parts . . . they are built for rugged use and a longer "prime of life"!

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THE PART  
OF YOUR  
**PROFIT**  
THAT LIES  
HERE!



## **SONOCO**

**cones reduce  
press-offs and waste!**

SONOCO precision-made cones deliver smoothly and evenly down through the primary wind.

For over 57 years, Sonoco research has pioneered in the creation of cone surfaces and tapers to meet every new yarn development in the textile industry. The right combination of surface and taper will give a perfect foundation for a sound package for every type yarn.

Get the most efficiency in winding, packaging and delivery of yarns. Use Sonoco precision-made, job-engineered cones.

Typical of SONOCO product improvement is this 3°30' Velvet Surface Cone. The velvet surface prevents slippage of filament yarns or fine count cotton yarns in primary winding. This package feeds off smoothly and completely without sloughing, hanging or breaking. The Velvet Surface is available on all SONOCO cones.



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# MODERN TEXTILES

June, 1957

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MAGAZINE

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## The Principal Trade Groups

Man-Made Fiber Producers  
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National Federation of Textiles,  
Inc. .... 389 Fifth Ave., New York  
American Association of Textile Chemists and  
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Technology, Inc. .... 100 W. 53th St., New York  
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of America, Inc. .... 1450 Broadway, New York  
Synthetic Organic Chemical Manufacturers  
Association ..... 41 E. 42nd St., New York  
Textile Distributors Institute,  
Inc. .... 469 Seventh Ave., New York  
American Rayon Institute  
350 Fifth Avenue, New York

## CONTENTS

### Publisher's Viewpoint

More Bewilderment over NFT-ACMI Merger ..... 29

### Features

Personality: That Reliable Team of Tarshes & Roaman ..... 31  
by Jerome Campbell  
The Many Names of Nylon ..... 33  
Wanted: More Imagination ..... 34  
by Elsie M. Murphy  
The Outlook for Nylon in Tire Cord ..... 38  
Non-Woven Gains in Europe ..... 42  
by K. R. Draw  
New Trends in Dyeing and Finishing—Part 2 ..... 46  
by Hillary Robinette, Jr.  
Vat Dye Printing without Starch ..... 50  
Ornamentation of Apparel Fabrics: Spot Designs V ..... 52  
by Victor Lobl

### AATT Papers

How Modern Metallics are Made ..... 65  
by William B. Davis  
Metallic Yarns in High Fashion ..... 67  
by Fred J. Waterman  
Metallic Yarns in Domestics ..... 69  
by E. Douglas Miller  
Dyeing Fabrics containing Metallic Yarns ..... 71  
by Robert J. Thomas

### Departments

Outlook in Textile Marketing—Robert C. Shook ..... 30  
Report from Europe ..... 44  
Dyeing and Finishing Notes ..... 49  
Report from Japan—B. Mori ..... 56  
New Machinery—New Equipment ..... 58  
New Fabrics—New Yarns ..... 62  
TDI News and Comments ..... 63  
Textile News Briefs ..... 74  
Yarn Prices ..... 78  
Calendar of Coming Events ..... 92  
Advertisers Index ..... 92

## High-Strength Rayon

A new wet tenacity strength, 10 percent higher than previously announced, is reported for Fortisan-36, high-strength rayon made by Celanese Corp. of America, in the firm's latest technical bulletin (TD-20B) describing this yarn. The bulletin provides additional data adjusted to include 270, 300 and 400 denier Fortisan-36, as well as previously recorded information on 800 and 1600 denier. End products suggested for the new product in the bulletin, available from the Celanese Industrial Textile Sales Department in Charlotte, N. C., include V-belts, electrical core thread, hose, paper reinforcing, tarpaulins, packaging tape, duck reinforcing and safety belts.

## Science of Fibers Discussed

"Fiber science" was described as a relatively new but increasingly important branch of learning and research activity by S. Jack Davis, assistant director of research for the Chemstrand Corp. He told the Cincinnati Section of the American Chemical Society at a recent meeting that fibers, as seemingly unrelated as human hair, lumber products, fur, wool, cotton and nylon are just samples of the vast range of fibers which play a part in our daily lives and "deserve specialized scientific study."

He pointed out that in the clothing industry alone, latest available figures show that \$4,500,000,000 worth of man-made and natural fibers were converted in one year to \$24,500,000,000 worth of clothing. In describing the development of man-made fibers, Mr. Davis said that "nature did not confine herself to one or two. She uses the same polymer to produce linen, cotton and wood fiber." He also dealt at length upon the question of dyeing man-made fibers and the Chemstrand-developed Chem-nyle process announced last year.

## Regnery Heads TRI

Walter Regnery, vice president of Joanna Cotton Mills Co., Joanna, S. C., was elected president and chairman of the board of trustees of the Textile Research Institute, Princeton, N. J., at a recent meeting of the trustees. Other officers elected were: William E. Clark, vice president and general manager of Textile Division, United States Rubber Co., New York, vice president and chairman of the executive committee; Dr. Bruce B. Allen, technical director of Textile Division, Celanese Corp. of America, Charlotte, N. C., treasurer; and Paul C. Alford, Jr., of the Institute, secretary.

## Italian Acrylic Fibers

Chemstrand Corp. has announced it has reached an agreement with Societa Edison of Milan, Italy, for manufacturing acrylic fibers in Italy by a newly-formed subsidiary of Societa Edison. Chemstrand will be a minority shareholder. The subsidiary will be licensed by Chemstrand to produce the fibers by the same process used by Chemstrand at its Decatur, Ala., plant. Another Societa Edison subsidiary recently started production of Acrylonitrile, the major raw material, in Italy. Fiber output is expected by 1959.

## Banana Fiber Bags

Use of banana fiber instead of 100 percent jute for the manufacture of bags is being tried at Umtali in a factory which now supplies Southern Rhodesia with most of its bags. For the past six months the bags have been made containing up to 30 percent banana fiber, 20 percent sisal and 50 percent jute. Trade quarters at Salisbury, Southern Rhodesia, say that when the technique of batching and carding the banana fiber is perfected, it will be indistinguishable from jute. Rhodesia imports jute.

# The word for rayon HARTFORD

the symbol of dependability

**Count on Hartford** for a wide range of the finest rayon fiber staple. Count on Hartford for on-time service... a thoroughly dependable source of supply.

- Solution-dyed heavy denier crimped rayon staple KOLORBON†
- White heavy denier crimped rayon staple . . . VISCALON 66†
- White heavy denier "smooth" rayon staple . . . VISCALON 44
- White fine denier regular rayon staple . . . . . VISCALON 22

†Available in both 3" and 6" lengths

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*The country's leading producer of solution-dyed rayon staple*



for  
successful  
dyeing  
of  
acrilan-wool  
blends  
by  
a  
one-  
bath  
method .....

**DECOMINE**

*The problem of achieving satisfactory union dyeing of Acrilan-wool blends by a one-bath method is solved by DECOMINE, developed by the Arkansas Company for Chemstrand Corporation.*

*A balanced cationic and non-ionic auxiliary, Decomine produces dyeings of remarkable uniformity and excellent color values.*

*Acid, metallized acid, metallized neutral, and chrome colors may be successfully used. However, selected colors of these groups should be used for optimum results.*

*Our technicians are available to assist in developing formulas for your specific needs.*

*We acknowledge the helpful cooperation of the Chemstrand Corporation in the development of satisfactory dyeing formulas in the application of Decomine.*

°Acrilan is the registered trade-mark of the acrylic fiber manufactured by the Chemstrand Corporation.



Photo taken at Fair Lawn Finishing Co. — Courtesy of ELECTROMET REVIEW



**ARKANSAS CO., INC.**  
*Serving the Textile Industry for over 50 Years*  
**NEWARK, NEW JERSEY**

### Coming Next Month:

## Urlaub will Report on New Things at the Knitting Show

A full report on the recent Knitting Arts Exhibition will be presented in the next month's issue. It will be written exclusively for **MODERN TEXTILES MAGAZINE** by George Urlaub, the well-known consultant to the knitting industry. In his report, Mr. Urlaub will describe the major exhibits at the knitting show, paying particular attention to new developments in machinery and equipment.

His report will be interpretative and analytical: he will examine the exhibits in the light of his 45 years' experience in knitting to reveal, for the benefit of our readers, what was really new and significant at the Exhibition. In his analysis he will focus on the importance of the new developments in terms of faster productivity and improved quality of knit goods. Watch for Mr. Urlaub's report in our July issue.

### PTI to Hold Seminar

In collaboration with the National Association of Wool Manufacturers, Philadelphia Textile Institute will hold a five-day seminar on the theme of "textiles today" June 10 to 14 at the Institute, Schoolhouse Lane and Henry Ave., Philadelphia 44. Registration fee will be \$35 and room and board \$75. Among the topics covered during the seminar will be fibers and their uses; what's new with wool; the new fibers and

their possibilities with wool; yarns in fabric styling; developments in finishing; production planning; costing theory; costing practice; market research, and a panel discussion on sales. Reservations may be made by writing directly to the Institute.

### Wool Fabric Import Curbs Asked

Full application of the Geneva Reservation on imported wool fabrics was urged upon the Federal Government by a delegation of the National Association of Wool Manufacturers. The Reservation, a part of the General Agreement on Tariffs and Trade (GATT), was invoked for the first time by President Eisenhower in 1956. It provides that the U. S. may increase the duty on imported woven wool fabrics from 25 percent of value (20 percent in some cases) to 45 percent. This may be done when imports in any calendar year exceed 5 percent by weight of average annual domestic production in the three prior years.

### Denman Names New Sales Agents

The Denman Textile Rubber Co., makers of pickers and other loom parts, has appointed The Karl H. Underfurth Co., of Charlotte, N. C., to be its exclusive sales agent in Virginia, North and South Carolina.

Denman parts will be sold in Georgia, Alabama and Tennessee by R. E. L. Holt, Jr., and Associates. Holt's territorial agent is John P. Norman of West Point, Ga. In New England, New York, New Jersey, Pennsylvania and Delaware, and Canada Denman's exclusive selling agents will be the Texplant Corp.

Denman plans to build a warehouse in Charlotte, N. C. in the near future to stock Denman loom parts. The company's factory is now located in Cuyahoga Falls, Ohio.

## Pre-Test Your Dyeing Formulas & Techniques

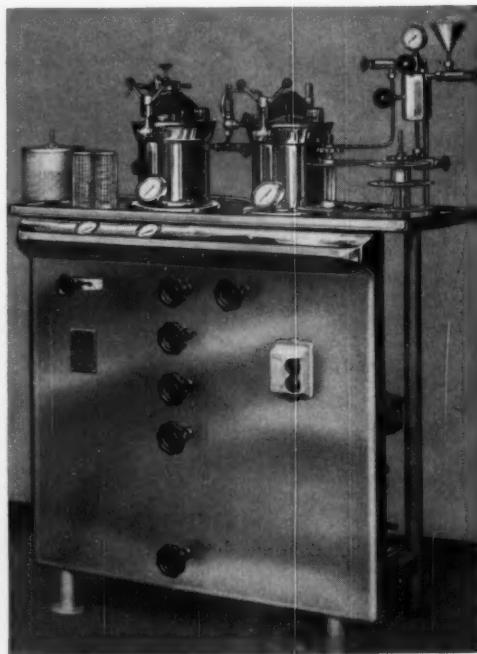
with a **SCHOLL**

**High-Temperature Laboratory Dyeing Machine**

With SCHOLL Laboratory Dyeing Machines you can carry out versatile and dependable dye-testing on any textile fiber in any form. Exactly proportioned to production machines, they enable you to avoid changes or corrections once full-scale dyeing is begun. You can add dyestuffs and chemicals, or remove samples at any time, without interrupting the cycle. Dyeing can begin above or below the boiling point—and be carried on with or without pressure. The overflow and reserve tank lets you prepare a new bath while continuing to dye in the main pressure kier. Construction is entirely of acid-resistant stainless steel.

SCHOLL also makes High-Temperature Pressure Dyeing Machines with 11 to 1100 Lb. capacity, High-Temperature Skein Dyeing Machines up to 440 Lb. capacity, and all types of carriers.

Write for more information



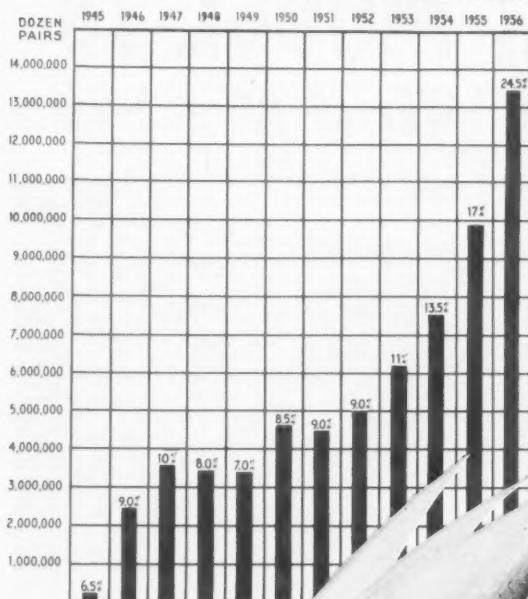
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in ever increasing  
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in  
High  
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Seam-Free hose of superlative fineness and clarity of fabric, either plain or patterned, to satisfy the most fastidious wearers, are produced on the famous Scott & Williams KN circular knitting machine (with patented automatic tensioning)



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# FOSTER MODEL 78

## Heavy Duty Precise Wind Machine



Standard 6"  
Traverse Cone

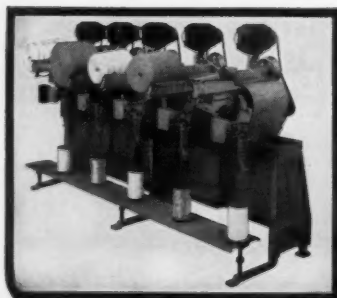
51 Lb. 10" Traverse Cone  
Wound on Foster Model 78

**This 51-lb. Cone of Rayon Tire Cord  
Is a Typical Product of Model 78**

FOSTER MODEL 78 was designed for heavy duty work, such as winding rayon tire cord, sisal twine, sash cord, and heavy cotton and wool yarns. But its controls are so sensitive that it has also wound successfully 10 single cotton yarn to 31 lb. cones. Thus it offers wide adaptability as well as maximum package size and high production.

This machine has individually motor driven spindles, with push-button electronic slow start and spindle brake. Electric stop motion, with calibrated scale, assures accurate and uniform package size. It may be equipped to wind traverses from 6" to 10" and diameters up to 16", and will draw overend from bobbins or from swifts, reels or an unrolling device. It has no clutches or idler pulleys, and long drive belts are eliminated. It may be equipped with positive, gear driven gainer attachments or belt gainer which is easily adjusted for various yarn sizes. Easily positioned single weight adjusts pressure and pressure release mechanism. Spindles are mounted on ball bearings. In short, this machine utilizes every proven technological improvement.

*For the complete story,  
write for Bulletin A-98A*



### FOSTER MACHINE COMPANY

Westfield, Massachusetts, U. S. A.

Southern Office — Johnston Bldg., Charlotte, N. C. • Canadian Representative — Ross Whitehead and Company Limited, 1475 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ont. • European Representative — Muschamp Textile Machinery Limited, Keb Lane Bardsley, Oldham, England

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for the "Easy Solution"  
of your textile brightening problems...

Unique because of their exceptionally high solubility in water, BLANCOPHOR HS-71, HS-76 and HS-31 optical whitening agents possess these quality features:

- \* Recommended for pad or mangle application on cotton and rayon fabrics.
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THE POWDER FORM  
**BLANCOPHOR HS-71 and HS-76**

## THE NEW LIQUID FORM **BLANCOPHOR HS-31**

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*From Research to Reality*



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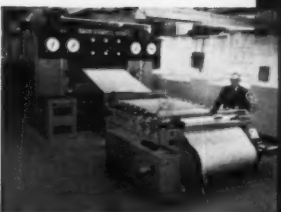
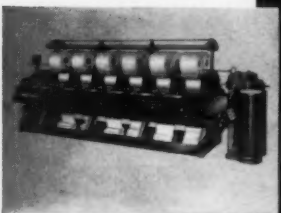
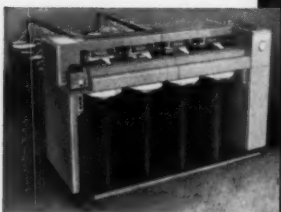
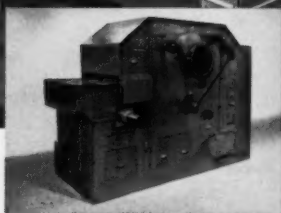
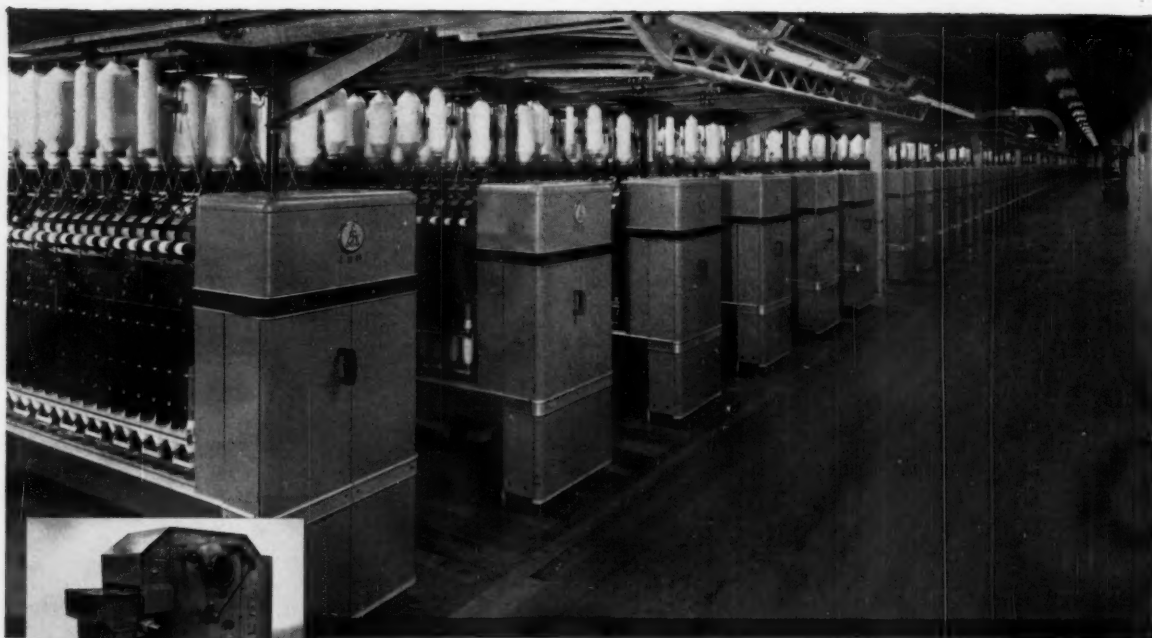
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*"Competitive position" — these are the words being uttered daily in mill management meetings. They have to do with many things — efficiency, production per man hour, quality, operating costs, waste control, and profits.*

Mills throughout the country have started their move toward "Better competitive positions" with a SACO-LOWELLIZING PROGRAM. Specifically, the SACO-LOWELLIZING PROGRAM helps you make better use of floor space, thereby improving production flow; it coordinates the successive steps in processing; reduces waste, spoilage and unnecessary handling of stock; and, helps you realize the greatest economies in operating and maintenance costs.

*Ask your nearest Saco-Lowell Sales Office for a "Forecast of Savings" based on a Saco-Lowellizing program.*



# SACO-LOWELL-SHOPS

60 BATTERY MARCH STREET, BOSTON 10, MASS.

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# CS<sub>2</sub> AND SODIUM Hy

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Stauffer is a major source of supply of these essential textile chemicals. Stauffer was the first — is still the largest — producer of Carbon Bisulfide.

Carbon Bisulfide of purity exceeding 99.9% is shipped in tank cars of 8,000 and 10,000 gallons from Bentonville and Roanoke, Va., Lowland, Tenn., LeMoyne, Ala., Chester, Pa., and Perry, O. (Drums of 5, 10 and 55 gallons from LeMoyne and from Richmond, Calif.)

Sodium Hydrosulfide in aqueous solution of high purity and highest practical concentration is now available in tank cars of 8,000 and 10,000 gallons from Chester, Pa., Roanoke, Va., Lowland, Tenn., and Dominguez, Calif. Also in 55-gallon drums from Chester and Dominguez, and in tank trucks from Dominguez.

For a continuous, dependable and flexible source of supply, make your arrangements with Stauffer.

*stauffer means service*





# in carpeting, nothing adds wear like **NYLON!**

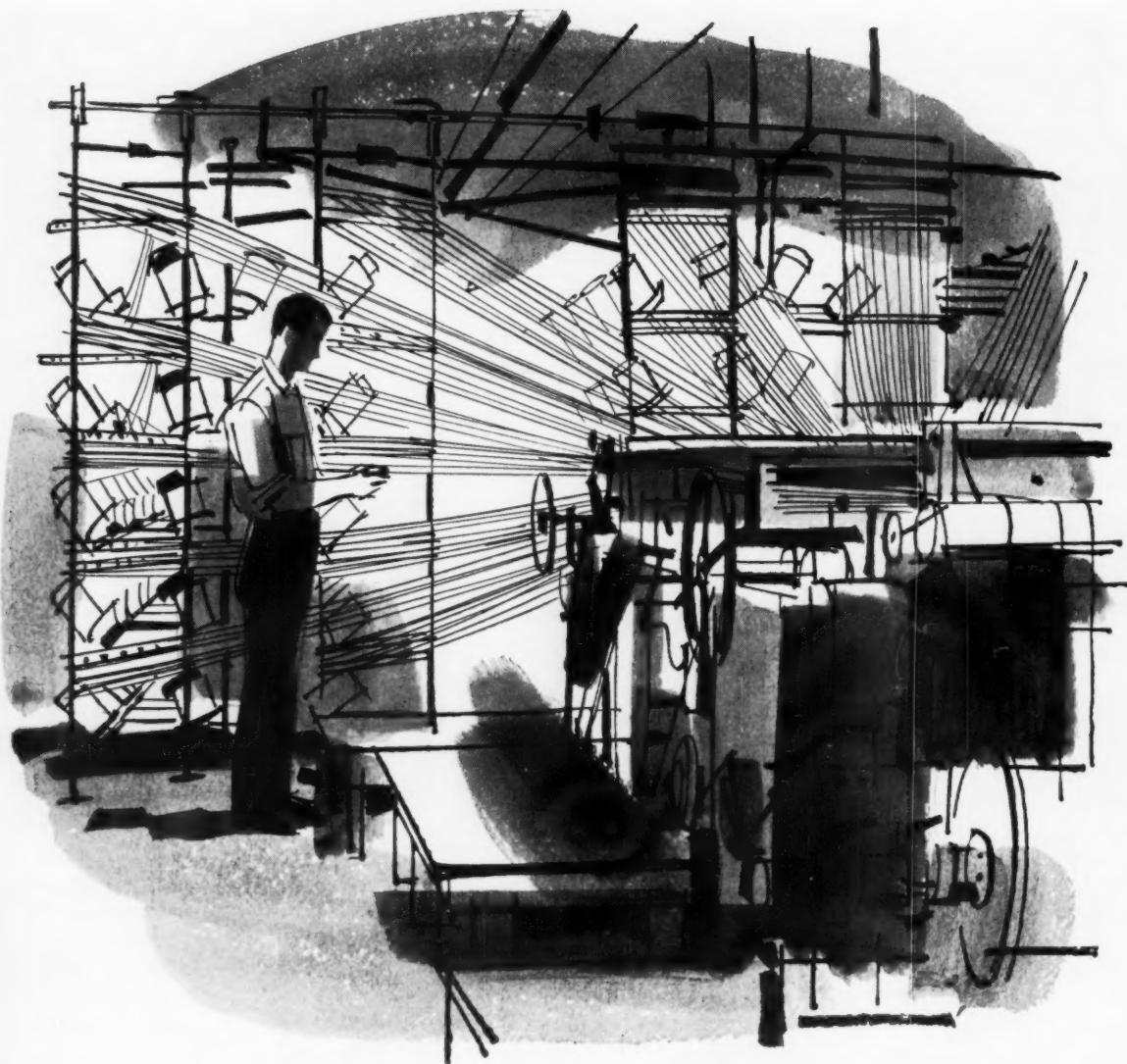
How does it wear? That's one of the most important questions consumers ask about carpeting. Permanent textures, higher recovery from crush, excellent resistance to matting, and greater resiliency are other important performance characteristics consumers want to know about. Nylon has them *all*, and they've been proved not only in the laboratory, but in *actual wear tests, too!* Flame-resistance? Nylon does not support flame. *No other fiber adds durability to floor covering like nylon!* The toughest possible traffic test proves... The Higher The Nylon Content—THE LONGER THE WEAR!



**INDUSTRIAL RAYON CORPORATION**, Sales Office: 500 Fifth Avenue,  
New York 36, New York • 627 Guilford Building, Greensboro, North Carolina



Identical strips of carpeting—without padding of any type—were laid on bare, rough steps in an industrial plant and subjected to heavy plant-personnel traffic. Each carpet contained a different percentage of nylon as indicated in the unre-touched photograph shown. The carpets were rotated progressively and regularly. Top 3 samples were removed after stair-edge showed 80 to 95% pile destruction. Test for remaining 4 was stopped at the 98,000 pedestrian mark.



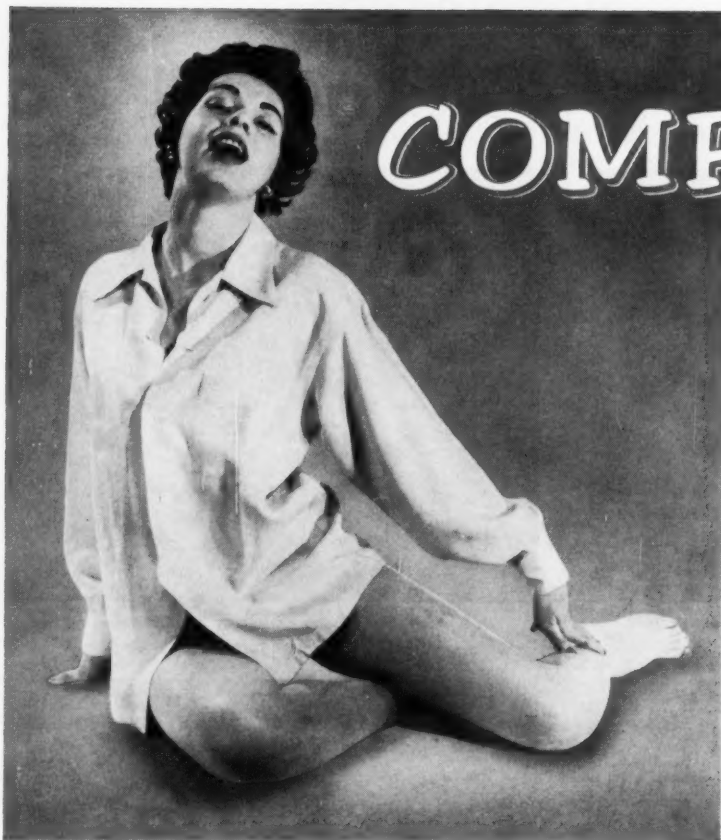
Nowhere in the textile industry can your mill problems be solved more realistically and effectively than in American Viscose Corporation's TRD\*. This is a priceless plus you get with Avisco® fibers or yarns, and you pay no more for it.

\*Here in our Textile Research Department we use actual mill machinery under mill operating conditions. With such complete facilities, we can start with the fiber, open it, card it, spin it, weave it, dye and finish it. Or starting with the yarn, we can beam it or twist it, weave it or knit it, dye it and finish it. What works here will work in your mill, too.

**AVISCO**

This assistance is as near as your phone. Call LA 4-7200 or write American Viscose Corp., 350 Fifth Ave., New York 1, N. Y.





**COMFORT** is  
only one of  
the many  
"TASLAN"\*  
features...

At the recent Knitting Arts Exhibition, many of the people who stopped at our booth seemed amazed at the several qualities and selling features noticeable in finished garments made from "Taslan"\* Textured Yarns processed on our U. S. ACME TEXTURIZER.

It's true . . . of the many "Taslan"\* features, comfort is only one, but it's a mighty big selling point—for now synthetic yarns can have all the advantages of spun-like fabrics without shortcomings!

Another big advantage is the U. S. ACME TEXTURIZER, the textured yarn machine! Now in production on "Taslan"\* textured yarns at DuPont licensees, this new machine is introducing a whole new quality and profit approach to textured yarn production.

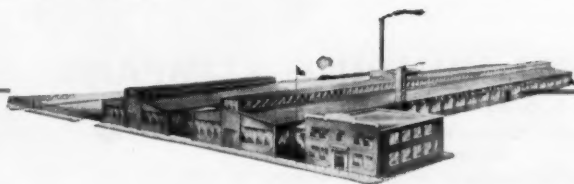
This new machine is designed for both the wet or dry process of texturizing twisted or untwisted filament yarns from cakes, cones, pirns, etc., to new, bigger, uniform headless packages. Mill operators are high in their praise of its positive yarn feed control, its simplicity of threading and accurate tensioning.

If you are licensed to produce "Taslan"\* yarns, or are considering entering the field . . . write or phone for complete information on the new U. S. ACME TEXTURIZER—the first efficient production unit for "Taslan"\* textured yarns!

\* "TASLAN" is DuPont's registered trademark designating textured yarns made in accordance with quality standards set by DuPont.

**U. S. TEXTILE MACHINE COMPANY**

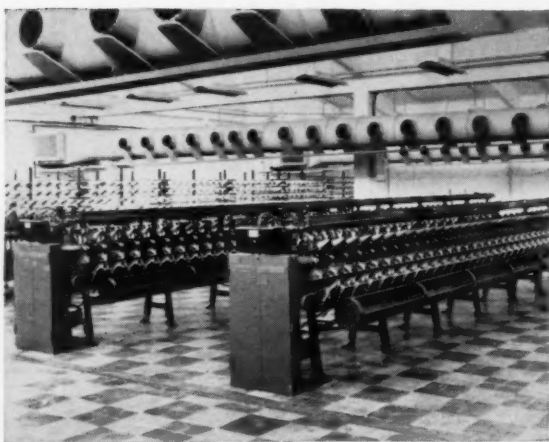
**Scranton 8, Pa., U. S. A.**



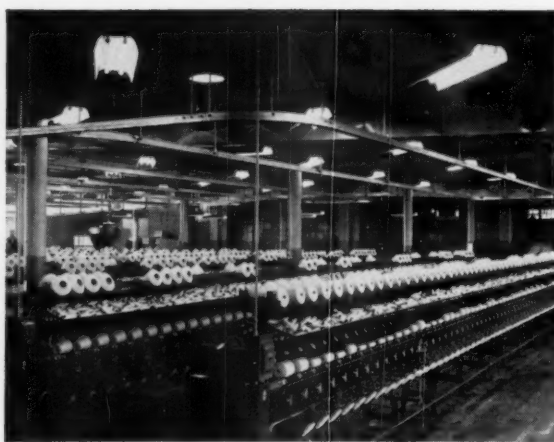
**U. S. TEXTILE**

designers and manufacturers of  
**U. S. ACME MODERN THROWING EQUIPMENT**

# Leesona ROTO-CONER® —the winding way around the world



**URUGUAY** — Roto-Coners set up to wind onto paper cones. Machines are equipped with round bobbin boxes.



**U. S. A.** — Roto-Coners winding parallel tubes on one side, cones on the other.



**GREAT BRITAIN** — Roto-Coners winding open-wind knitting cones.



**FRANCE** — Roto-Coners coning 100s — 120s cotton yarn.

Every textile manufacturing country in the world uses Leesona Roto-Coners in quantity.

These quiet, trouble-free drum winders produce every type of open-wind package. They wind onto paper tubes and cones for shipment or knitting . . . onto cork-covered, wood cones for warper creels . . . onto perforated tubes and springs for dyeing . . . onto wood tubes and cones for twisting.

Around the world they wind cottons . . . spun syn-

thetic staples . . . wools . . . worsteds . . . linens . . . blends.

The exclusive *Rotary Traverse* on these machines eliminates all moving parts connected with reciprocating guides — permits high speed, reduces maintenance, and assures uniform packages and top quality yarn.

For facts and figures on why these versatile, dependable machines are popular around the world, write for the illustrated Leesona Roto-Coner booklet.

23.6.14



## UNIVERSAL WINDING COMPANY

P. O. BOX 1605, PROVIDENCE 1, R. I.

Sales Offices: Boston • Philadelphia • Utica • Charlotte • Atlanta • Los Angeles  
Montreal • Hamilton, Canada

Agents in every principal textile center throughout the world.

**NOW COMMERCIALLY AVAILABLE!**

# **560 DENIER**

**EASY-TO-DYE HIGH TENACITY**

*caprolan*<sup>®</sup>†

**ELIMINATE PLYING COSTS FOR MANY USES!** Our new 560 denier Caprolan eliminates the need to ply multiple ends of finer deniers as well as the need for maintaining costly fine denier inventories.

*All the advantages of nylon plus these bonus qualities as well . . .*

**ECONOMICAL DYEING!** Colors of striking depth and brilliance with virtually any class of dyestuffs. You can use directs, too!

**MAXIMUM BULKING!** Yarns from all accepted processes give fullest cover in carpet, upholstery and drapery fabrics.

**LASTING WHITENESS!** Unusual snowy whiteness with no appreciable yellowing in storage or in fabrics!

**HIGH STRENGTH!** Great impact resistance and high tensile strength, added toughness and abrasion resistance for long life.

**WONDERFUL DRAPABILITY!** Warm soft hand with beautiful draping qualities for home furnishings fabrics.

Caprolan 560 denier, 32 filament yarn with 1 turn "Z" twist is put up on 3½ lb. aluminum tubes.

*Phone, wire or write today for more information, technical assistance, or delivery information.*

*caprolan* . . . the performance fiber . . . by Allied Chemical

IDEAL FOR MANUFACTURERS OF:

Upholstery  
Automotive  
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Braids  
Sewing Thread  
Seine Twine  
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*Fiber Sales and Service*

*National Aniline Division*

*261 Madison Avenue, New York City 16, N. Y.*

†Allied Chemical's polyamide fiber



## Bemberg grabs off the brass rings!

In this merry-go-round we call the textile industry, grabbing off one "brass ring" in a season is quite an accomplishment.

But Bemberg has done the impossible . . . with an array of big successes that are setting fabulous sales records for mills, converters, manufacturers, and retailers.

Bemberg rayon sheers soared to new highs in 1956. As usual they outsold all other rayon sheers combined . . . but with an extra spurt of volume that shattered the figures of the past several years.

Cupioni®...our wonderful yarn of fashion...

in combination with cotton and other fibers, has cut a wide swath of volume in every field where soft goods are used! Cupioni rayon is the yarn sensation of the decade.

There are many other "brass rings" tucked away in the Bemberg rayon yarn line-up. Investigate Cupracolor†, with color bond, Nub-lite†, Flaikona† (America's only continuous filament plied flake), Strata†, Dream Slub, and the many other unusual Bemberg rayon yarn achievements.

When you grab a winner, the pay-off is heavy!

†Reg. app. for

Bemberg®

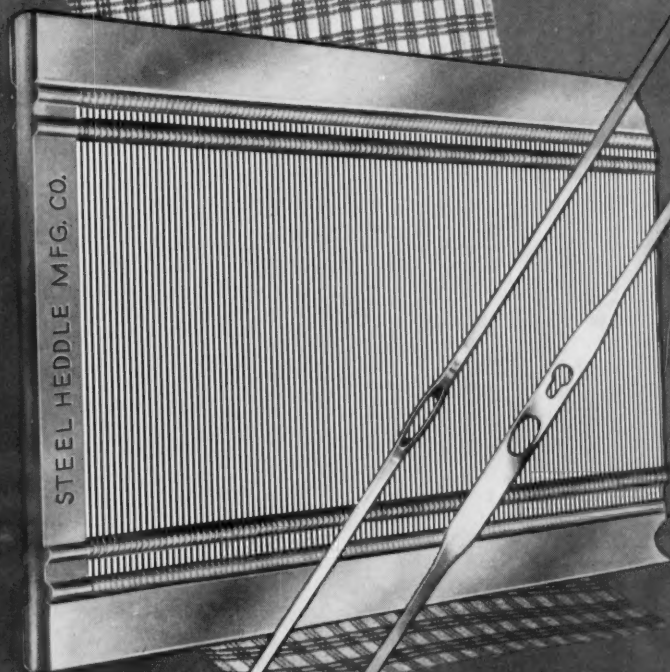
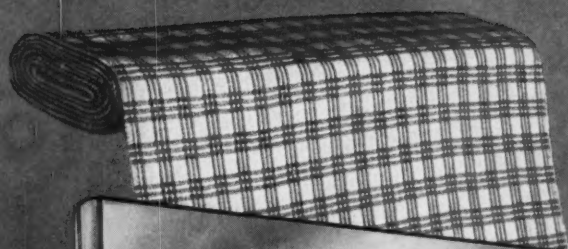
ARISTOCRAT® OF RAYON YARN

The above rayon yarns are products of: AMERICAN BEMBERG • Main Office: 261 Fifth Avenue, New York 16, N. Y. • Plant: Elizabethton, Tennessee.



# Stainless Steel

## FOR BETTER QUALITY WEAVING



Stehedco Stainless Steel Heddles, Drop Wires and Reeds are becoming increasingly popular because many mills where they are in use have proved that they greatly increase loom production efficiency and have longer life expectancy.

Manufactured with the same precision craftsmanship as all Stehedco Products, they have all their superior features PLUS the added feature that they cannot rust. Therefore, you get no cloth blemishes caused by corrosive deposits.

Install Stehedco Stainless Steel Heddles, Drop Wires and Reeds in YOUR looms and you will be assured of far greater satisfaction than you ever thought possible, for very much longer. You will have less down time because Stainless Steel lasts longer, and there is less premature breakage. You will also have better quality cloth.

**STEHEDCO STAINLESS STEEL HEDDLES, DROP WIRES  
AND REEDS ARE CHEAPER IN THE LONG RUN**

Other Plants and Offices: Granby, Quebec, Canada—  
Lawrence, Mass.—Greensboro, N.C.—Atlanta, Ga.—Textile  
Supply Co., Dallas, Texas—Albert R. Breen, Chicago, Ill.



*when Acrilan® quality is being checked...*

# WE ALWAYS CALL THE CLOSE ONES YOUR WAY!

Two teams have direct responsibility for making Acrilan. Plus an umpire.

One team, the Technical Department, writes the specifications for the product. (And they demand the closest tolerances, the most exacting standards in the industry.)

The other team, Manufacturing, provides the facilities for producing Acrilan acrylic fiber according to these specifications.

The umpire is Quality Control.

Like the man in blue on the ball field, Quality Control calls the plays. *Unlike* the man in blue, this umpire is <sup>1</sup>frankly biased. In your favor.

He calls all the close ones your way. Let there be a hairline deviation from the prescribed standards at any stage of production... and Quality Control gives the batch in question the well-known thumb. In other words, like all umpires, Quality Control has the last word.

As a result, Acrilan quality has now reached a level of top-grade uniformity once thought unattainable in the newer man-made fibers.

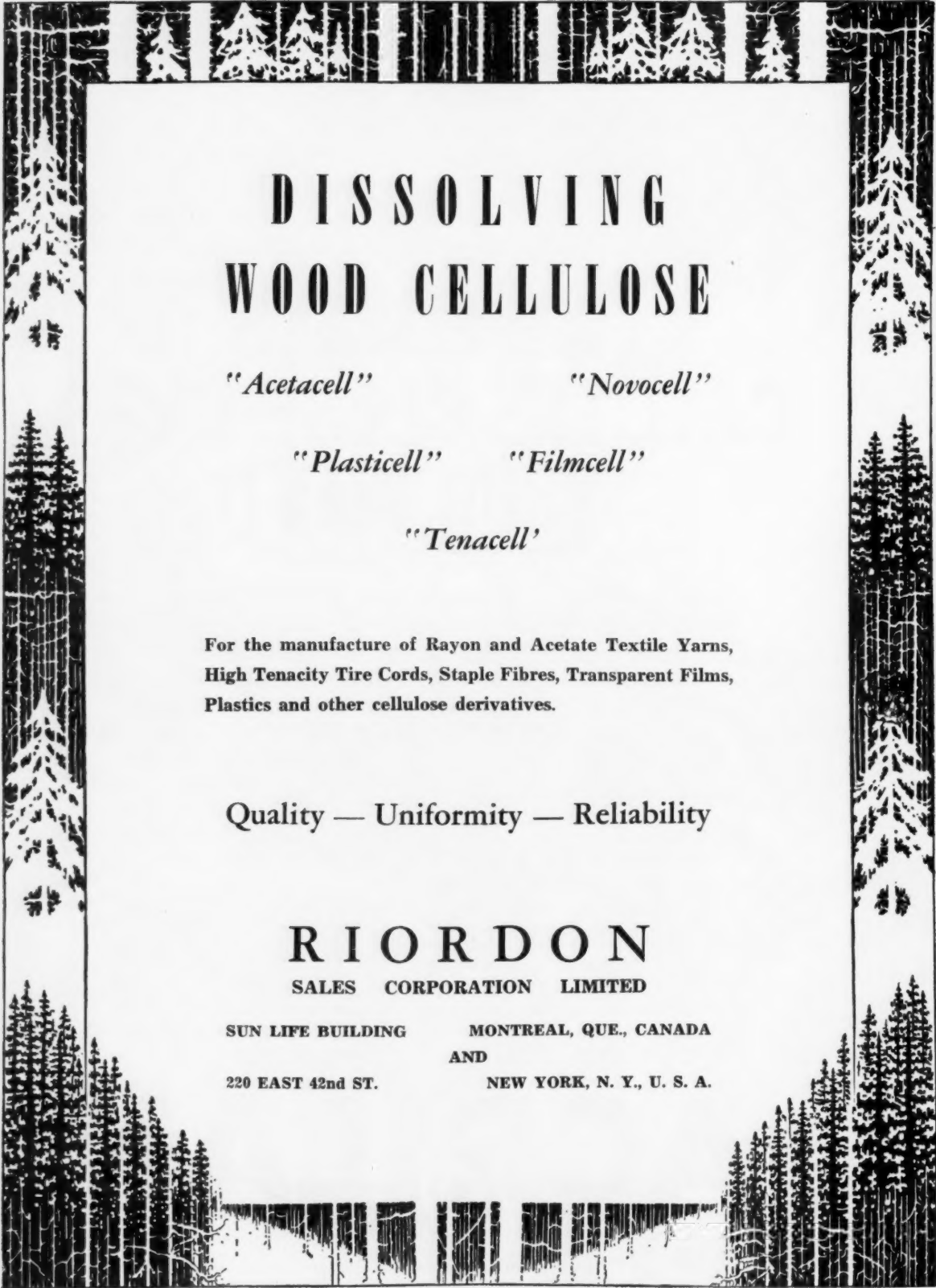
In *your* mill... thanks largely to this vigilant umpiring by Quality Control... Acrilan offers the following significant contributions to efficient, economical operation:

- STAPLE-LENGTH UNIFORMITY *superior to the most critical needs in the textile field.*
- FLY REDUCTION *so significant it is raising yarn quality, reducing mill costs and waste.*
- UNIFORM DYEABILITY... *dye merges maintained without change for over two years now.*
- FAR BETTER FINISH CONTROL... *with the direct effect of improved carding and spinning uniformity.*
- IMPROVED HIGH BULK PROCESSING... *for greater assurance of fabric shrinkage control.*

In the light of such advances, there can be no arguing with the umpire. His calls in your behalf have gained for Acrilan over the past two years the record of being the top-spinning, smoothest-running fiber in mill after mill throughout the country.

# ACRILAN<sup>®</sup>

THE CHEMSTRAND CORPORATION • GENERAL SALES OFFICES: 350 FIFTH AVE., NEW YORK 1, N. Y. • DISTRICT SALES OFFICES: 3½ Overwood Road, Akron, Ohio; 4 Pearl Street, Dedham, Mass.; 222 South Church Street, Charlotte, N. C. • PLANTS: ACRILAN® ACRYLIC FIBER—Decatur, Ala.; CHEMSTRAND® NYLON—Pensacola, Fla.



# DISSOLVING WOOD CELLULOSE

*"Acetacell"*

*"Novocell"*

*"Plasticell"*

*"Filmcell"*

*"Tenacell"*

For the manufacture of Rayon and Acetate Textile Yarns,  
High Tenacity Tire Cords, Staple Fibres, Transparent Films,  
Plastics and other cellulose derivatives.

Quality — Uniformity — Reliability

## RIORDON

SALES CORPORATION LIMITED

SUN LIFE BUILDING

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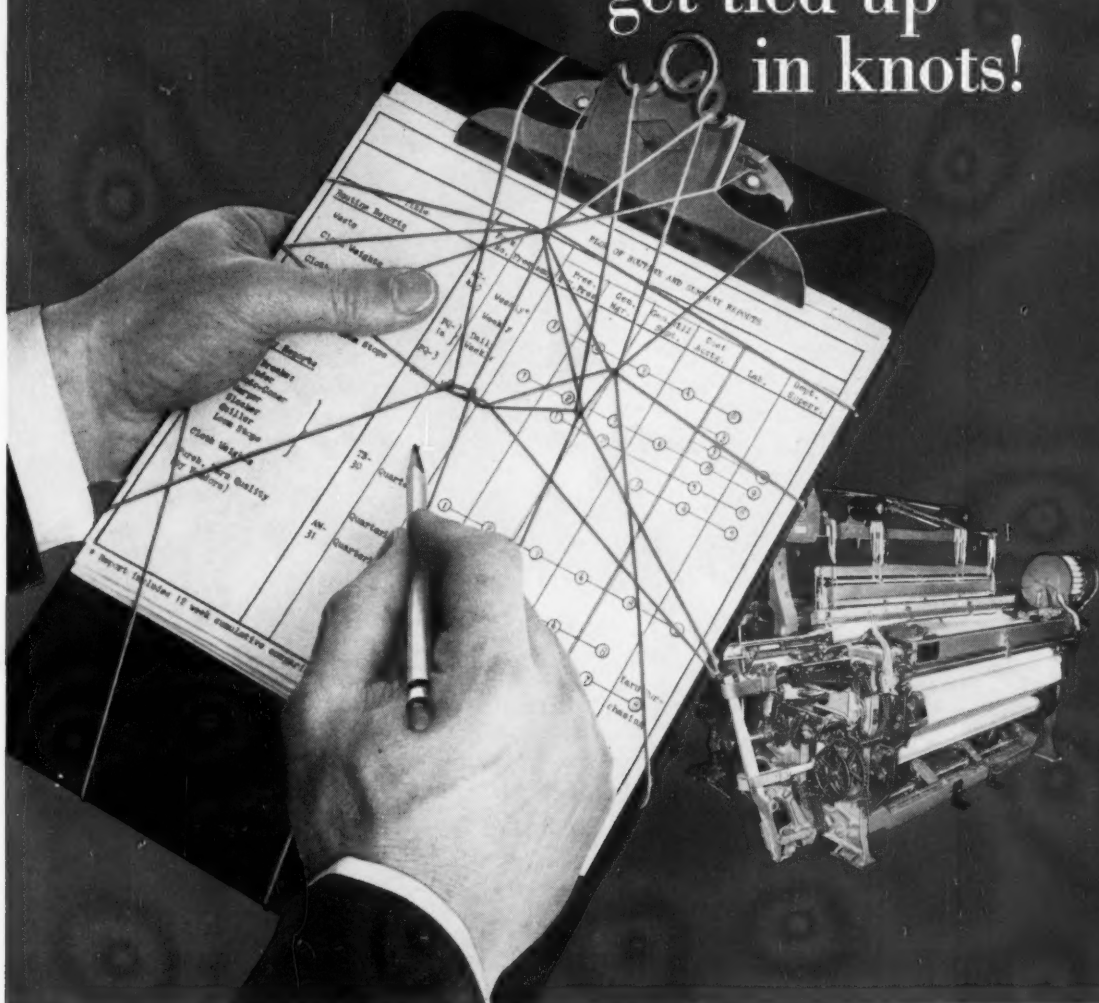
AND

220 EAST 42nd ST.

NEW YORK, N. Y., U. S. A.



don't let your  
production schedule  
get tied up  
in knots!



The most realistic schedules can go awry. Suddenly there's a knot in the yarn—it breaks, the loom stops—and up go costs.

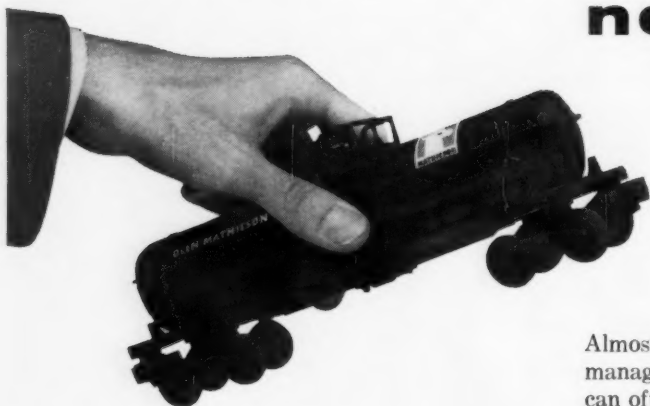
With IRC Continuous Process Rayon, it's a cinch to curtail break-downs. No other yarn is so free of knots, puff balls, of flaws that plague ordinary rayon. And no other yarn dyes so free of streaks.

That's why weavers of critical fabrics like failles and satins *insist* upon IRC Continuous Process Rayon. It cuts down seconds, increases mill efficiency, keeps them smack on schedule.

Solve your knotty problems—use IRC Continuous Process Rayon; it costs no more!



Use IRC Continuous Process Rayon...uniform mile after mile... perfect inch by inch... and it costs no more!



## need an extra car?

Almost like magic it can appear. Alert management of rail, water, and highway traffic can often produce that extra supply... that's important to you in regular operations, invaluable in emergencies.

Olin Mathieson's imaginative approach to the logistics of the chemical process industries produces results. Our experience in shipping, handling, and storage of basic industrial chemicals can help you buy to better advantage.

### MATHIESON CHEMICALS

OLIN MATHIESON CHEMICAL CORPORATION  
INDUSTRIAL CHEMICALS DIVISION • BALTIMORE 3, MD.

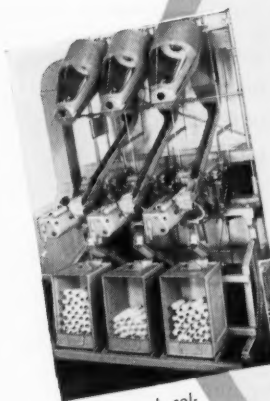


**INORGANICS:** Ammonia • Bicarbonate of Soda • Carbon Dioxide • Caustic Potash • Caustic Soda • Chlorine • Hydrazine and Derivatives • Hypochlorite Products  
Muriatic Acid • Nitrate of Soda • Nitric Acid • Soda Ash • Sodium Chlorite Products • Sulphate of Alumina • Sulphur (Processed) • Sulphuric Acid • **ORGANICS:** Ethylene  
Oxide • Ethylene Glycols • Polyethylene Glycols • Glycol Ether Solvents • Ethylene Dichloride • Dichloroethylether • Formaldehyde • Methanol • Sodium Methylate  
Hexamine • Ethylene Diamine • Polyamines • Ethanolamines • Trichlorophenol

4682

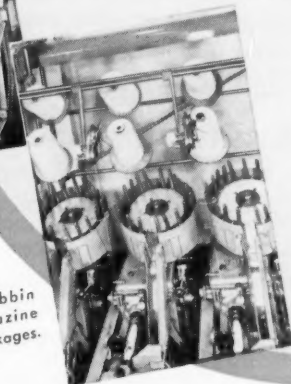


A few of the many types and sizes of filling bobbins that can be profitably run on the Fill-Master Winder.

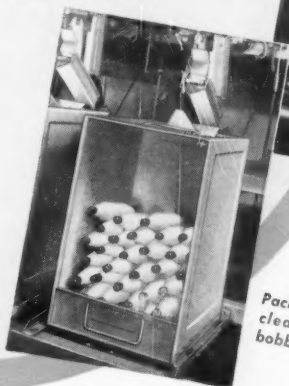


Exhaust hoods and collectors for mills having dust and fly in winding area.

Multi-cell empty bobbin magazine for magazine creeling or single packages.



Pin boarding arrangement for synthetic yarns.



Packing device for orderly, clean storage of filled bobbins.

## Only the Whitin-Schweiter **FILL-MASTER\*** Filling Winder Gives you such Complete FLEXIBILITY and ADAPTABILITY



Whitin-Schweiter Fill-Master\* Winder with Bobbin Loader

*Flexible . . .* for fully automatic winding of cotton, wool, worsted, synthetics and blends.

*Adaptable . . .* to a broader range of mill requirements than any other winder thru its complete line of optional accessories (see illustrations)

These are only two of many outstanding advantages, including:

- \* Machine speeds up to 10,000 R. P. M.
- \* Speed of individual spindles adjustable
- \* Bobbins up to 10 1/2"      \* Tail-less bobbins
- \* Variable layer locking traverse prevents sloughing
- \* Maintains uniform winding diameters, resulting in more yardage per bobbin

\*Trade Mark

# Whitin MACHINE WORKS

WHITINSVILLE, MASS.

CHARLOTTE, N. C. \* GREENSBORO, N. C. \* ATLANTA, GA. \* SPARTANBURG, S. C. \* DEXTER, ME.

Manufactured by WHITIN for sale in U. S. A. and Canada  
and by SCHWEITER, LTD., Horgen (Zurich, Switzerland) for sale in other countries

## *New Effects* IN WOOLEN, WORSTED AND HIGH PILE FABRICS

Now you can change the appearance and character of woolen, worsted and high pile fabrics with three new Turbo Finishing Machines . . .

- new effects in luster and hand
- new laid-down finish with high luster and sheen after processing with silicone and chemical solutions
- high pile fabrics that rival natural fur

With the Turbo Electro-Finisher, Wet Applicator, and Shearer, you have equipment that is almost completely mechanical and automatic.

Feature of the Turbo Electro-Finisher is an electrically heated cylinder faced with special grooves which separate and straighten the fibers and give the desired hand. Temperature of the cylinder is thermostatically controlled, making it possible to work closer to the critical temperature of the fiber than ever before.

Folder describing these three Turbo Finishing Machines is yours for the asking. Or better yet, see the demonstration units in operation in Lansdale — appointments arranged on request.

### **TURBO MACHINE CO.** LANSDALE, PENNSYLVANIA

*A Quarter Century of Manufacturing  
Precision Machines for the Textile Industry*



New luxury luster and hand  
in worsted fabric finished  
on Turbo Machine

Beautiful high pile fabric  
after finishing on Turbo  
Machine





## Publisher's Viewpoint

### More Bewilderment over NFT—ACMI Merger

Since the appearance of our May Publisher's Viewpoint, we have spoken to dozens of men who hold responsible positions in the production and marketing of man-made fiber fabrics. All these people are experienced in their fields, all are deadly serious in their devotion to the man-made fiber segment of the textile industry, and all share an intense concern for its prosperous future.

With hardly an exception, all these key people—the kind of people who really make our industry go—have expressed lack of understanding of the motives behind the planned merger of the National Federation of Textiles and the American Cotton Manufacturers Institute. It is not that they are prejudiced against the merger. Most of them are willing to accept the merger on the recommendations of the directors of NFT who favored it and acted so swiftly to bring it about.

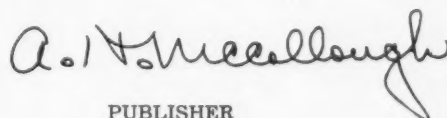
It is not that these bewildered people in synthetics manufacturing and marketing cannot see that, for some purposes, a combined effort by ACMI, NFT and the National Association of Wool Manufacturers in pursuit of common objectives can be highly effective. No, these confused people are willing to admit that ACMI, NFT and NAWM, working together in regard to foreign imports, labeling legislation and other matters that affect them equally, can do a lot of good. In fact, a fine beginning in such cooperation was made last year when these three trade organizations joined in forming the National Council of Textile Industries.

What bewilders our friends is the strange willingness of the National Federation of Textiles, for so many decades the spokesman for the manufacturers of man-made fiber fabrics, to submerge itself in an organization which is called the American COTTON Manufacturers Institute—an organization, which, as its name plainly indicates, has long been wholly devoted to advancing the interest of cotton manufacturers, and which in many instances has demonstrated a strong feeling that cotton is the best of all fibers and that the man-mades are things to be shunned and belittled.

Another thing that bewilders many in our industry, is the fact that the merger will leave no trade organization in existence devoted single-mindedly to the special interests of business men who specialize in weaving and knitting man-made fibers. The man-made fibers industry is big, they point out. Man-made fiber producing and weaving and knitting is an industry with a tremendous growth record, an industry that is expected by all students of our economy to grow bigger with every passing year.

Why is it then, our friends ask in their understandable bewilderment, that just when the man-made fibers have reached a state of really tremendous importance in the overall textile picture the industry that produces these fabrics decides that it is not strong enough, or important enough to have its own trade association but must allow itself to become a small department in the big trade association of the cotton interests?

We think that the bewilderment of our friends in the man-made fibers industry is entirely justified. We confess that we share some of this bewilderment ourselves. But maybe someone has the answer that will end our uncertainty. If so, we would like to hear from that person. The pages of MODERN TEXTILES MAGAZINE are open to him if he can help us and help our friends in their bewilderment and confusion.



PUBLISHER

# OUTLOOK IN TEXTILE MARKETING

By ROBERT C. SHOOK, Textile Economist

## Scrapping of textile machinery helping to bring healthier relation between capacity and demand

The steady liquidation of textile machinery has greatly strengthened the position of the industry. Reports for 1956, for example, show a decline in staple consumption, chiefly cotton, rayon and acetate, but an increase as compared with 1955 in spinning activity as a percentage of practical capacity.

This change, from a state of substantial over-capacity to a close balance of machinery availability with demand, has important implications:

1. Inventory excesses, when they occur, will be smaller than in the past. Information about inventories is largely lacking, but the reduction in spinning capacity has created an obstacle to serious over-production.

2. It has become easier for management to curtail output, when markets become obviously over-supplied. The industry is beginning to think in "marketing terms", of maintaining supply in relation to demand, on the one hand, and of finding effective ways to stimulate demand, on the other.

3. Pricing judgment is being modified. There is less pressure to sell at a loss merely to keep machinery in operation. There is a greater tendency to compare the industry's profits with those of other industries, and to insist on an adequate margin.

**Advantages of Stable Prices**—In the long-run, perhaps the most important of these tendencies will be a stronger and more stable price structure. This will have obvious effects on profits. Indirectly, it may also work counter to uncalled for cheapening of the industry's products. The mill which resists selling at a loss will find it easier to resist pressures to meet a competitive price by cheapening a construction. Thus, in moving toward a sounder profit position, the industry may also move toward better quality and more effective merchandising.

**Rayon's Fortunes on Mend?**—Changes in the competitive position of different fibers take place slowly but nevertheless surely. What seems to be in prospect now is an improvement for one of the older man-made fibers—rayon. A number of factors support this conclusion:

1. In industrial markets, high-tenacity rayon offers a good buy in terms of strength per cost unit. Consumption in many industrial end uses will continue to increase, even though there are further losses in tire cord.

2. Fabric styling has improved. At the same time fashion tendencies have changed, and now favor the softer types of fabrics.

3. Research by fiber producers should find increasing commercial outlets in the next year or two. New high strength staple, for example, will encourage blending of rayon with non-cellulosic fibers. The market for solution dyed fiber is also expanding.

4. In individual markets, there is some indication that cotton fabrics have after several years reached at least a temporary peak in popularity. There is even evidence that blending of rayon with cotton is on the increase.

5. Merchandising programs effecting rayon have been improved and should soon begin to have noticeable results. In the meantime, the great increase in the number of fibers, blends and finishes had tended to dilute the importance of individual fiber reputations. There will be a greater tendency to judge rayon on its own merits, and on the contribution it makes in blends.

**New Horizons for Modified Yarns**—Another development which may begin to bear fruit in the next year or two involves the various modifications of filament yarns, particularly of the thermoplastic variety.

(Continued on Page 73)

Dr. Shook, vice president and research director, A. W. Zelomek Associates, Inc., 350 Fifth Ave., New York City.

# That reliable team of TARSHES & ROAMAN

By Jerome Campbell

EDITOR, MODERN TEXTILES MAGAZINE

**N**OT TOO MANY YEARS ago some mill management men were inclined to take a dim view of converters. Secure in their ownership of bricks and mortar, looms, spinning frames, and stocks of fiber (and fabric) the mill people, in many instances, snobbishly regarded converters as men of no substance, fellows who were here today and somewhere else tomorrow.

"That Seventh Avenue crowd," the mill owners muttered among themselves, as they turned over in their minds ways to bypass the fellows who annually paid good money for millions of yards of gray goods, had them dyed and finished and then went out and persuaded garment manufacturers to buy the finished cloth.

Yarn producers also used to be infected by this attitude of doubtfulness with regard to the converting fraternity. Being in the heavily capitalized chemical business as they like to tell the world, and not in the flighty textile trade, the makers of man-made fibers were impressed by the men who owned the tangible assets of mills, looms and spinning frames. And like millmen, yarn producers were inclined to look upon converters as "luftmenschen," men of air, buzzing about mysteriously on the fringes of the all-important gray goods market.

Today, of course, all this is happily changed. Millmen have gradually learned the lesson that converters are mighty important fellows. Abandoning their supercilious attitude of being above and remote from the functions of converters, most millmen of ability have taken the trouble of familiarizing themselves with what converters do and how they go about doing it. And in the yarn producers' book these days, the word converter is printed in big letters and heavily underlined. Nobody is valued more, and more painstakingly courted by marketing executives among yarn producers than "that Seventh Avenue crowd."

Indeed so important has "Seventh Avenue" become to the big gray goods weavers, that they have more and more in the past few years been satisfied by nothing less than becoming themselves physically part of Seventh Avenue. One by one they uprooted their sales offices from the tradition-encrusted purlieus of Worth Street and the enchantments of the Awkwright Club to open bigger and gaudier salesrooms in the

general vicinity of Seventh Avenue and 39 Street. When 1407 Broadway became crammed to bursting with mills, the later migrants from Worth Street began building like mad on neighboring corners to find houseroom for themselves right in the laps of the once snootily regarded converters. Today, by a few minutes' walk in any direction from the corner of Seventh Avenue and 39 Street, a slow moving pedestrian can reach the sales headquarters of Stevens, Lowenstein, Burlington, Milliken, Dan River, and many other big names in fabric manufacturing.

Not the least of the forces which have helped make Seventh Avenue the key area and converters the key people in synthetics marketing today has been the rise in recent years of impressively successful converting firms. A case history which illustrates this trend is Reliable Textiles Co., Inc., a converting firm whose 31 years of steady growth has made it one of the most respected houses in the converting business.

The story of Reliable began in 1926 when two young fellows working for a textile jobbing house, decided that the time had come for them to get into business for themselves. George Tarshes and Irving Roaman had a great deal in common besides their shared experience of working side by side for six years selling fabrics for their employer. They were of the same age, both having been born in 1900. Their backgrounds, too, were remarkably similar. Tarshes, like Roaman, had been born in New York City and educated in the city's public schools. Tarshes's father had been a successful clothing manufacturer while Irving Roaman's father had for years operated Roaman's, a retail womenswear store which had grown in scope with passing decades and moved step by step uptown with the tide of retail business. Today the store at 20 West 39 Street is run by Irving's brother, David, and is well-known to New York's women shoppers.

For their new business located in a small store at 205 West 36 Street, Tarshes and Roaman selected the name, "Reliable," a choice that was careful and deliberate because the word was full of meaning to them and symbolized the standard of performance they had pre-set for their business, a standard which over the years Reliable Textiles has more than fulfilled.

In the early years of the firm's growth, Reliable carried a stock of dress goods and lining fabrics for sale to garment manufacturers who sent around for cloth to meet their immediate needs. From the start, business for the new firm was good. Both Tarshes and Roaman knew thoroughly the trade they served. They had acquired their knowledge through hard, tireless effort in their six years as employees, having worked successively as salesmen, then, in Tarshes's case advancing to sales manager, and in Roaman's case going up from selling to become a buyer and stylist.

Soon the new firm advanced from jobbing into converting. They bought unfinished silk crepe fabrics and had them finished for sale as linings to the dress trade. In 1930, Tarshes and Roaman became interested in the possibilities of rayon and acetate. They tried some of these new synthetic constructions in their line, and discovered that they had much wider styling and color possibilities than silk. One of their big hits about this time was a 6 x 6 rough crepe of acetate for women's dresses which Reliable sold at the highly satisfactory price of \$1.10 a yard. In a few years, growing volume of business required more space and the firm moved first to 200 West 37 Street, and later to 1410 Broadway where it has remained. Today, Reliable has an entire floor at this address.

Alertness to new things in synthetics, a canny ability to select the sounder, profit-making items from the new things, a skill and energy to find volume markets for the items chosen—these qualities are an important part of the Reliable way of doing business. As long ago as 1936, for example, Reliable began to work with spun rayon fabrics. Over the years since then spun rayons, especially in linen-like constructions, have become one of the firm's best known and most important lines. "Bonarela," Reliable's best known linen type spun rayon introduced in 1952, is still going strong, having passed the 35 million yard mark in sales this year. It is carried in 50 different colors.

During the war years, Reliable continued its determined growth to reach the goal, close to the hearts of Tarshes and Roaman, of becoming one of the most

substantial fabric distributing outfits in the business. The company reached out to serve customers beyond the local New York City area. A sales force was established throughout the country with a branch office in Chicago and Los Angeles.

"Reltex" a brand name for Reliable fabrics was coined and pushed forward by hang tags, and by national advertising. A menswear division was formed, Reltex Fabrics, Inc.; export trade was developed in foreign countries such as Canada, South America and South Africa. Reltex Fabrics of California, a subsidiary created in 1946 brought in new business from burgeoning sales to the influential and fast-growing West Coast garment industry.

Meanwhile, the high reputation of Reltex fabrics sold to the cutting trade gave rise to an insistent demand from retailers for goods of this kind for sale to home sewers. In response, Tarshes and Roaman established Retailtex Corp., a subsidiary which distributes Reliable's fabrics for over-the-counter sales.

With their shrewd grasp of the real world and what is happening in it, George Tarshes, Irving Roaman and their associates more than ten years ago sensed the big change that was coming in the clothing habits of most Americans. They saw that the trend was toward more colorful, more informal and more varied types of apparel for both women and men. They lost no time in getting Reliable Textiles right in the midst of this powerful new current in fashions and fabrics. Reliable soon became well-known as a specialist in a rich variety of colorful fabrics for sports and leisure wear.

Since 1946, Reliable has increased its volume tenfold while remaining a strictly converting outfit. Tarshes and Roaman during the war years and since have resisted the popular tendency among big converters to move backwards into the textile industry by acquiring mills and sideways by acquiring finishing plants. They have remained converters, unfettered by investments in real estate and machinery, relying on their experience and skill as stylists and merchandisers to make their money.

(Continued on Page 55)



THEY TAKE AFTER POP—Irving Roaman's two sons (Alan on the left and Richard) are like their father deadly serious about the converting business. They believe in hard work and long hours, in painstaking care of the business of Reliable Textiles of which they are vice presidents.



# The many names of

# NYLON

Nylon is no longer just nylon. There are many different nylons, each with different properties, yielding different performance results when used in fabrics

By the Editors

IN THE BRAVE DAYS of the legendary West, now returned to us nightly in the flickering horse operas of TV, when a hard-living, two-gun man wanted to treat his friends, he motioned them up to the bar and rapped out: "Name your poison!" He meant, of course, that they were to specify the form and flavor in which they wanted their potent alcoholic portion.

So today, a fabric manufacturer anxious to use nylon in a fabric might well be asked to name his nylon. This is not to imply that nylon is poison. Far from it. Nylon is fast becoming an extremely nourishing bread-and-butter staple of textiles with annual production now running close to the 300 million pound mark.

This rising nylon production is the result of an increasing number of producers turning out this strong and versatile synthetic. Once there was only Du Pont, the originator of nylon. Then a new company, Chemstrand, acquired the Du Pont process and know-how by license and began to make nylon. Next in rapid succession three more fiber producers added a nylon to their products. They are, listing them alphabetically, Allied Chemical & Dye, American Enka, and Industrial Rayon.

"Well," someone in the back row might ask, "don't they all produce nylon? And isn't nylon just nylon?"

The answer here would seem to be yes and no. Yes, all these companies produce nylon. No, they don't all produce the same kind of nylon. Actually, they are producing polyamide fiber which may be derived from a great variety of new materials. In what way do these various nylons differ from each other? Let's try to find the answer.

To begin with, there are two major polyamide fibers in use in the U. S. One of these, first produced by Du Pont—and later by Chemstrand—is called nylon 6,6. The other, made by Allied, Enka, and Industrial is basically nylon 6. What is the difference between nylon 6,6 and nylon 6? We asked the chemists and their answer was quite complicated. But, with their help, we worked out the difference this way:

Nylon 6,6, is made from adipic acid and hexamethylene diamine. Since each of these raw materials contains 6 carbon atoms per molecule, this type of nylon carries the chemical notation nylon 6,6. Nylon 6 is made from caprolactam, which was originally developed in Germany and produced more recently in this country by Allied Chemical for its own fiber and those of several other producers. The caprolactam molecule contains 6 carbon atoms, and fibers produced from it are noted chemically as nylon 6. There are other types of nylon in production such as nylon 6,8, nylon 6,10 and nylon 6,11. There is, for example, Rilsan, recently offered for sale in the U. S.

by Snia Viscosa. Latching on to a phrase which may seem to startle, Rilsan's publicity people tell us mysteriously that their polyamide fiber is "made from castor oil." What they probably mean is that sebacic acid derived from castor oil, is one of its ingredients.

Yet to reach these shores from Europe is a teeming variety of other nylons, many, incidentally, with distinctive brand names. There are, for example, Nailon, Rhodia-nylon, Dacilo nylon, Bayer-perlon, VGF-perlon, Phrix perlon, perlonseide, perlon-corseide, Steelon, Grilon, Silon, and from the Soviet Union, Kapron. Yet no two polyamides are quite alike due to differences in polymerization and subsequent yarn making processes.

It is plain that nylon is a generic term for a whole group of synthetic fibers, the polyamides. As Matthews's "Textile Fibers" puts it, "Nylon is the generic term for any long chain synthetic polymeric amide which has recurring amide groups as an integral part of the main polymer chain and which is capable of being formed into filaments in which the structural elements are oriented in the direction of the axis."

Matthews then adds the following thought relevant to the theme of this discussion: "Thus the term nylon does not refer to a single material only. It covers a vast group of chemically related products and materials the physical properties of which differ considerably."

That there are many nylons and that their properties vary, seems thus well established. But what does this multiplicity and variety of polyamide fibers mean to the fabric designer confronted by the need to specify nylon in a fabric, or to the millman who has to decide what kind of nylon to buy in order to weave the fabric? It means that they will have to decide what polyamide comes closest to giving them the precise properties they want—stiffness, dyeability, impact strength, abrasion resistance, softness, workability—and then specify that brand of nylon for their use.

This is not a situation foreign to normal textile procedure. For centuries, fabric manufacturers have known, for example, that all cotton fibers or all wool fibers are not alike. In creating a given cotton fabric they have to decide what kind of cotton, of the many varieties available, they want in their yarns. The same is true of wool. It is well known that markedly different types of wool fiber are required for worsted fabrics, for woollens and for floor coverings. So in having to examine the properties of the respective polyamides to determine what nylon he wants, the millman will be acting in accord with long established textile practice.

(Continued on Page 55)

# WANTED: more imagination

Let's give our designers more  
scope, this textile leader says

By **Elsie M. Murphy**

PRESIDENT, S. STROOCK & CO., INC.

**N**OBODY in textiles needs me to tell him that the woolen business and, indeed, the textile business generally has fallen on its face. Nobody needs a Cassandra to wail that we're overproduced to the gills, that prices are down, and that profits are down (if profits exist at all). Most of us know it already.

We also know that babies are still being born naked; that production of naked babies is still on the upswing; that our rising birth rate and declining death rate is boosting our population toward the 200 million mark. The more bodies that exist, the more fabric must exist to cover them up. Isn't it remarkable that in a market which has been steadily expanding, the profits of textile manufacturers have been steadily declining? And isn't it sad? And how does it happen that way?

Is there a profit-making leavening agent in other industries that is lacking in ours? Frankly, I think so. Other industries are out fighting tooth and nail for the consumer dollar. "Fashion" and "styling" has been injected into everything and anything from garbage cans to paper plates. You wouldn't think that the telephone company had to worry about business, yet the phone company is passionately promoting colored telephones.

Appliance manufacturers talk more about silhouette than Dior. New models of automobiles are sisters under the tin to their predecessors—but each year the tin, or should we say, fin, looks as different as this year's Lilly Dache.

Yet, in the fabric business, where you would



**Elsie M. Murphy**

logically expect styling and fashion and mercurial change, we grind drearily along turning out the staples of a decade ago. In the textile industry, I think too many of us are copycats, not catalysts. Our textile schools are turning out technicians and they are *not* turning out creative, imaginative people bursting with fresh unpruned talent.

The fault doesn't lie with the textile schools. The fault lies with the executives of the country's textile houses who have done nothing to create a creative climate in their households. Why should anybody want to become a fabric designer? What sort of salary does our fabric designer receive? What is his status? What is his potential? He is often tucked away in a remote corner of a mill as though he were indigent Aunt Opal. He receives as much recognition for his accomplishments as the third fly from the left on the barnyard gate. He is anonymous. He receives no Oscar, no Tony, no Winnie, no Emmy, no nothing. If I were he, I'd have gone into interior decoration or furniture design or architecture.

The priceless ingredient in product and profit is imagination. Without creative imagination we are cutpriced cutthroats drawing one another's blood. But do presidents and boards of directors spend their time talking and thinking about imagination? They do not. They prattle on about rediscount rates and equity financing and utility flotation and contingent liability and marginal utility and multiple regression and the confidence interval of the conditional mean.

Top brass is too far removed from the loom. Top brass doesn't press enough of its product to its cheek, doesn't remember what the public can never forget: that after all the problems of business and finance are resolved, it still remains for the merchandise to appeal to the individual customer enough to be bought.

Even the prosperous rancher with all the machinery International Harvester can produce still bends down to scoop up a handful of soil and runs it

(Continued on Page 64)



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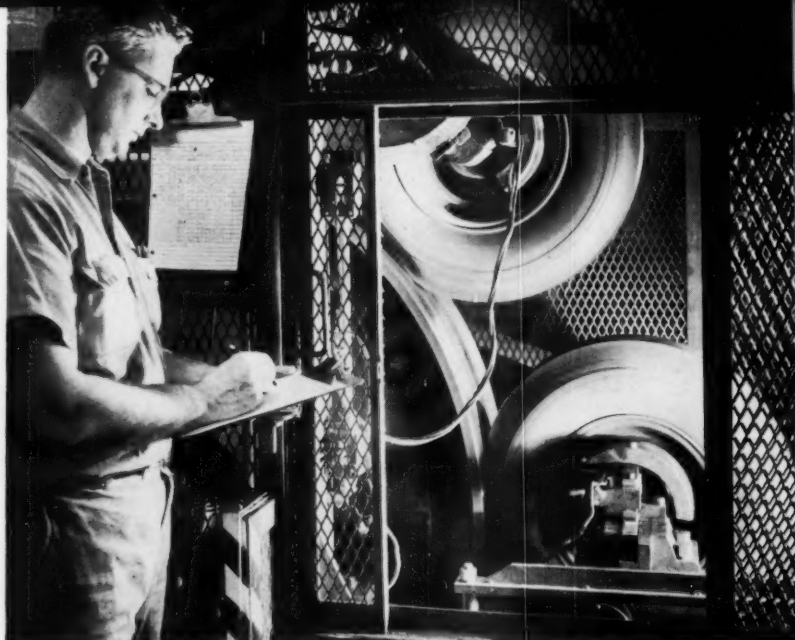
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**TESTING FOR THE LONG RUN**—Tires are tested at various loads and inflation pressures to determine performance of nylon tire cord at Du Pont's Industrial Products Research Laboratory.

**Intensive research, thorough road testing, aggressive merchandising are widening nylon's use in tires**



## The outlook for nylon in tire cord

**W**AXING steadily in vigor, the debate over the merits of rayon versus nylon in tire cord goes on. And the vigorous effort of nylon to win a greater share of the tire cord market grows more aggressive with every passing month. Recently D. H. Heckert of Du Pont, a firm that is the most energetic champion of nylon in this end use, had this to say about nylon in tires:

In 1944 high tenacity rayon became a major factor in tires. During the next 10 years, rayon virtually eliminated cotton from this market. But even before rayon replaced cotton, nylon began receiving considerable attention in tires. The use of nylon increased from about eight million pounds in 1952 to 64 million pounds in 1956. In view of the fact that one pound of nylon replaces about 1.6 pounds of rayon it becomes apparent that nylon has already made a substantial penetration in this market.

The primary deficiency of early nylon cord tires was growth—i.e., the tendency to increase in size during use. During the past few years hot-stretching equipment has been developed and used to reduce the growth characteristics of nylon cords before curing them into tires. This processing has essentially eliminated the problem of tire growth and has resulted in a substantial reduction in the amount of nylon required to build a satisfactory tire.

Improvements in the hot-stretching process coupled with new improved nylon yarns have been instrumental in making it possible for the tire companies to build better and better tires at lower and lower prices. The tire companies have just announced a cut in the price of nylon cord tires. You can now buy a 6.70 by 15 nylon cord tire for \$1.35 more than a standard rayon cord tire. The impact of this price change has not been determined, but it is expected to stimu-

late acceptance and use of nylon cord tires as original equipment.

At present, essentially 100% of the airplane and large off-the-road tires are reinforced with nylon. All of the premium passenger tires are nylon. Twenty-five per cent of all replacement passenger tires are nylon cord tires, which are now being offered as optional equipment on Chrysler, DeSoto, Lincoln, Continental, and all American Motors' models. High-speed testing of new cars by the auto companies is done using nylon cord tires. Nylon cord tires have gained widespread use on racing cars and on police cars where they insure the utmost in safety.

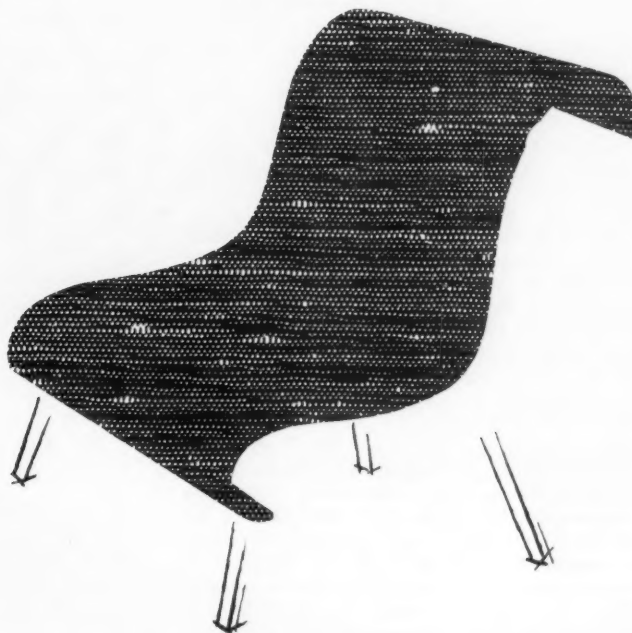
In planning Du Pont merchandising and research programs, a thorough knowledge of the performance characteristics of tires made from Du Pont yarns is needed. Much of the required information is developed in discussions with technical representatives of the tire and automobile companies. Other data must be developed in our industrial products research laboratory where we are equipped to do a thorough job of building and testing tires. Tire performance data are developed under carefully controlled conditions on our Pennsylvania and Texas fleets. Tire performance under normal use conditions is developed by commercial trucking and taxicab fleets located geographically throughout the U. S. A. On these fleets Du Pont now has over a thousand nylon and rayon cord tires rolling up millions of miles each month.

In the laboratory we find that nylon cord tires will withstand 10 to 15 miles per hour higher speed than either our laboratory-built tires using "Super Cordura" high tenacity rayon yarn or commercially produced cord tires. We also find that nylon cord tires have 2 to 2½ times as much carcass strength as rayon cord tires, both before and after running

(Continued on Page 40)

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## Celanese

CONTEMPORARY FIBERS

## Nylon Tire Cord

(Continued from Page 38)

24,000 miles on the Texas fleet, indicating excellent resistance to flex fatigue. The bruise resistances of nylon cord tires as determined in the laboratory proved to be from six to 20 times as good as rayon cord tires. These laboratory data suggest that nylon cord tires should give more dependable service than rayon cord tires.

In Table 1 we show the data obtained by a local cab fleet in comparing nylon and rayon cord tires produced by one of the major tire companies. Of the 27 nylon cord tires put on test, two tires failed on the fifth retread because of flex fatigue or impact breaks, six failed for other reasons, and 19 tires were running on the sixth retread when we stopped the test. In contrast to this, all 28 rayon cord tires failed—18 of the 28 original rayon cord tires failed due to flex fatigue or impact breaks—12 of these failures occurred before the third retread. The remaining 10 times failed for other causes such as cuts, ply separations, etc. The data obtained by the City Cab fleet in Wilmington, Del., support the laboratory data on rayon and nylon cord tires.

Using data supplied by City Cab, Du Pont ran a cost analysis, a summary of which appears in Table 2. Even though nylon cord tires cost about 20% more than the rayon cord tires initially, at the close of the test period the nylon cord tire cost per 100 miles was 7.1 as compared to 8.2 cents for the rayon cord tires and two-thirds of the nylon cord tires were still running. The City Cab Company saved \$29.42 per year on each cab equipped with nylon cord tires.

TABLE 1  
CITY CAB FLEET  
TIRE FAILURES VS. RETREADS

Nylon Tires	Retreads						
	Original Tread	1st	2nd	3rd	4th	5th	Total
No. in Service	27	26	24	22	22	22	19
Fiber Failures							
Flex & Impact Breaks	0	0	0	0	0	2	2
Other Failures							
Cuts, Ply Separation, Etc.	1	2	2	0	0	1	6
Rayon Tires							
No. in Service	28	24	18	9	5	2	0
Fiber Failures							
Flex & Impact Breaks	1	5	6	2	2	2	18
Other Failures							
Cuts, Ply Separations, Etc.	3	1	3	2	1	0	10

TABLE 2  
COMPARATIVE TIRE COST  
PER 100 MILES

	Nylon	Rayon
New Tire Cost	\$23.21	\$19.53
Total No. Retreads	116	58
Total Tire & Retread Cost	\$1,438.67	\$952.84
Total Tire Miles	2,012,150	1,163,103
Cost/100 Miles	\$0.071	\$0.082



## Nylon fur-like pile fabrics keep Himalayan climbers warm

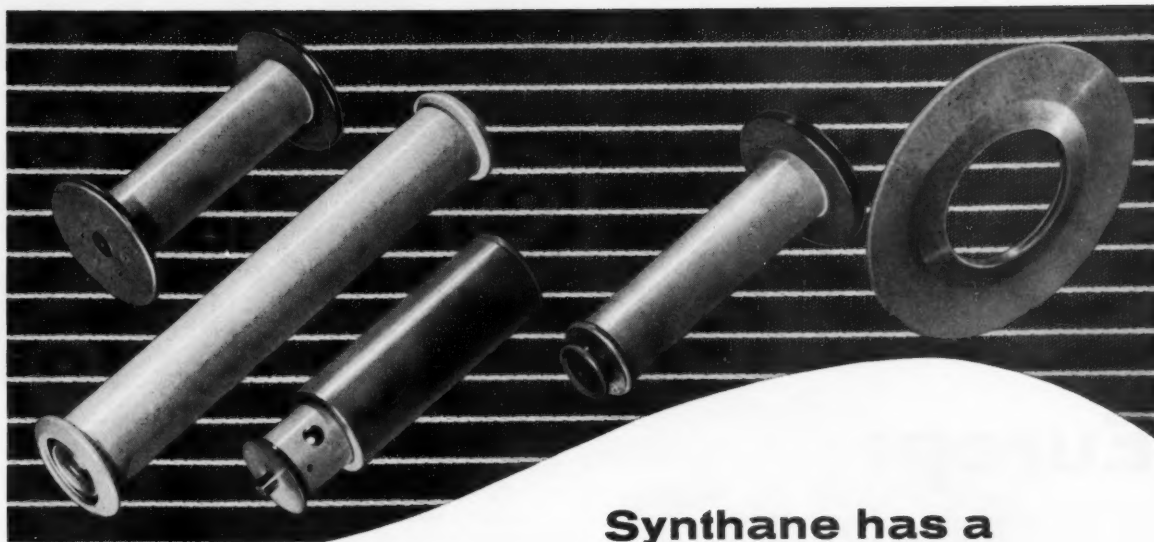
LONDON—Tested under Arctic and Antarctic conditions, nylon fur type fabrics have proved that they are the equivalent of the best natural furs with this added advantage: their light weight makes them ideal for conditions which call for great physical exertion. The British Transarctic Expedition was equipped with nylon fur anoraks—the warm hooded jackets worn by Eskimos—following their successful use by the Everest climbers in 1953.

Likewise the all-women's expedition which left London, England, last year for the Himalayas was fitted out with similar garments designed to be completely reversible for use as "windbreakers" with the nylon fur inside or worn on the outside.

The fabric section of these jackets and trousers is made of nylon-cotton mixture cloth, known as "Everest Cloth". This, worn to face the weather, acts as a windbreaker. The nylon pile of the other side is constructed to have all the qualities of real Eskimo clothing. It combines extreme warmth with the light weight found in caribou pelts. This pile fabric is frost-shedding and water repellant as is the wolverine that Eskimos use for trimming their parka hoods.

Two members of the all-women's Himalayan expedition are shown wearing the special eskimo-like garments made to protect them from the rigors of the world's loftiest peaks. The reversible parkas have a shell of nylon-cotton to resist wind penetration. The fur-like pile lining, which also can be worn on the outside, is made of nylon. On the left, Mrs. Dunsheath, leader of the expedition, wears the garment "skin-side outside". On the right Miss Hilda Reid, a member of the group, wears the parka with the "fur-side outside".





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# Non-woven gains in Europe

By K. R. Draw

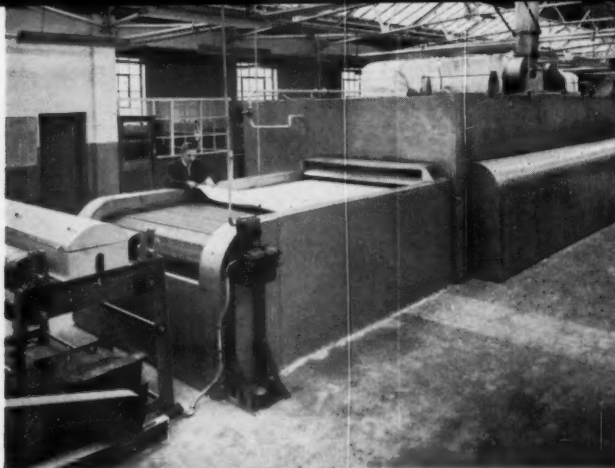
LONDON—Some British companies have linked with U. S. counterparts in their development of non-woven fabrics (Tootal Broadhurst Lee Co. Ltd., for instance, have signed an agreement with West Point Manufacturing Co. to exchange information). The main trend on this side of the Atlantic is towards impregnation techniques rather than the thermoplastic fiber trend.

Rubber Technical Developments Ltd., of Welwyn Garden City, produce webs up to 25 ft. by using positively charged latex. The latex is introduced into the web of fibers by spraying. They discovered that maximum spray penetration called for use of a high liquor ratio, which in turn demanded eventual removal of much water. So by using rubber covered squeeze-rollers immediately after latex saturation, they lower this liquor ratio sufficiently for standard latex compounds to be used.

After primary research, Rubber Developments decided an essential for producing good non-woven fabrics was a thoroughly random web. A single-unit completely metallic wound card was designed to work in conjunction with a lapping device delivering a bat at required weight, a bat that can be saturated with latex by spraying or immersion. During impregnation, perforated conveyor belts keep the bat in position.

It has been found that 25% rubber is necessary for a satisfactory fabric. Drying in this company's plant is done in standard drying tins, after which the lightly formed web passes through a heated two-roller calendar at 110°C. Vulcanization, the final process, is accomplished by passing the fabric through a 100°C hot air chamber for 15 minutes. This vulcanizing gives superior bond and much greater resistance to solvent action.

Another British company who pioneered in non-wovens are Bonded Fibre Fabric Ltd., of Bridgewater. Again, their preference is for impregnation with some bonding compound. In their case they use mainly butadiene acrylonitrile. This company has been manufacturing non-woven fabrics on a substantial scale since 1952. They claim to produce a wider range of non-wovens than any other single producer in the world.



UP-TO-DATE EQUIPMENT—This drying machine is used in England at Southalls (Birmingham) Ltd. to finish bonded acetate fiber wadding.

Parallel-laid viscose-bonded fabrics are manufactured in 38/40-in. widths, in weights per square yard varying from ½ oz. to 3.75 oz. Cross-laid fabrics, similarly bonded, are made 51-in. wide in weights of 1½ oz. to 6 oz. per square yard. Cross-laid rubber-bonded fabrics are produced using wool and nylon in addition to viscose rayon. Both natural and synthetic rubbers are used for bonding.

A relatively small firm, Robert Pickles Ltd., of Burnley, have won for themselves a big place in the British bonded fabric field (in Britain, non-wovens are known as bonded fabrics). Ten years ago Pickles had sufficient vision to anticipate the terrific potential for non-wovens. From scratch, without turning to any other firm in order to benefit from previous experience, they set out to produce their own fabrics.

Consequently they have produced their own equipment, and today have developed a wide range of original fabrics. Although black and white, or off-white, are main colors in general use, Pickles produces in its standard range green, pink, gray, yellow, blue, and brown fabrics. Viscose rayon is used extensively in this range, and Pickles are making particularly interesting non-wovens with flecked effects. Basically gray, these are flecked with other colors randomly distributed throughout the mass.

Several other British manufacturers are now using a super-crimped Fibroceta—acetate staple—supplied by Courtaulds for making a variety of non-wovens. Of these, Southalls (Birmingham) Ltd. are producing a fabric called bonded acetate fibre wadding (B.A.F. for short) in a wide range of densities, thicknesses, rigidities and widths. During manufacture of B.A.F., Fibroceta fibers are opened, carded, and bonded by applying a plasticizer. A low temperature heat treatment completes the bonding process.

Bonded Fibroceta makes a good, resilient wadding, or padding between sheets (such as coated hard-board). A great advantage is that it can be sealed to these sheets by radio frequency welding techniques. Car-door panels, flutings on car seats, quilted effects on bed-furnishings, baby-carriage linings and handbags are but a few of the applications already considered.

Bonded Fibroceta is made in fast colors, and experiments are being made with embossed surface finishes. Embossing, of course, adds to the strength of the fabric. Owing to its thermal conductivity of roughly 0.25 B.T.U's./sq.ft./hr. for 1-in. thickness and 1°F temperature difference (density approxi-

(Continued on Page 85)

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## REPORT FROM EUROPE



BY SPECIAL CORRESPONDENT

### **Courtaulds merges with British Celanese; Snia plans big fiber expansion; Belgians worried about rayon**

LONDON—The big merger in Britain, involving Courtaulds Ltd. and British Celanese Ltd., is regarded by European textile men as a warning of things to come.

If there had been no European "common market" on the horizon, dynamic Courtaulds and faltering British Celanese might, for normal economic gains, have decided "to go it together," as they say over here.

**Impact of Common Market**—But the specter of the "common market," which was recently ratified by Germany's Upper Chamber—the first parliamentary body to do so, made such a merger virtually inevitable. The Organization for European Cooperation has, for years, been implicitly stating that Europe has too many spindles and looms; that imports are inevitable, while capital needs for modernization are vast, and demand will, at best, expand only two to three percent a year through 1960.

Britain's new man-made fiber giant is thus regarded as both an economic and a political "must." And it is felt that similar moves will take place in other countries as the "common market" nears its final stage—perhaps late this year if the French Assembly follows the lead of the present administration.

**Nature of the "Merger"**—Except in certain areas where British Celanese products are exceptionally well thought of, Courtaulds will, over the next year or two, gradually supplant the old Dreyfus' company's trade mark. Actually, Courtaulds is buying out British Celanese stockholders lock, stock and barrel. Holders of three Celanese shares will get two of Courtaulds common; holders of the Celanese five pound, 7% preferred shares will receive six pound shares of new Courtaulds 6%; and four pound 7½% preferred holders will get 5 pound new 6% preferred.

The merged company's fixed assets will total 89 million pounds (nearly \$250 million). It will have liquid assets worth another 11.5 million pounds, and total net worth of some 160 million pounds (nearly \$450 million). Gross profits last year were 23.5 million pounds; net was 11.2 million. The new firm will control nearly 90% of Britain's rayon production and, through Courtaulds' half interest in British Nylon Spinners, Ltd., will have a big foot in the door of nylon production. Courtaulds, of course, already manufactures a wide range of man-made fibers in addition to rayons.

**Snia Viscosa Expansion**—Franco Marinotti, president of Snia Viscosa, Milan, Italy, announced an 18 year, 6% bond issue—worth the equivalent of \$9.6 million—to expand production facilities for Rilsan and Lilion polyamide fibers and for certain chemicals. The Snia head also took exception to the United States foreign cotton disposal program which, he said, is unfair to other textiles.

**French Rhovyl Growing**—France is now turning out Rhovyl, a polyvinyl chloride fiber, at the rate of about 7 million pounds per year. The company intends to double output by spring of 1959. It is pushing sales in the United Kingdom, where the first showing took place in Leicester. Emphasis is on using Rhovyl's "triboelectric" qualities—warmth-giving through static electricity—in knitwear. In France, it is said that Rhovyl underwear eases rheumatism. In addition to the U. K., Rhovyl licenses are in Italy and Germany.

**New German Dyestuff**—Dr. A. Wurz of Badische Anilin & Soda Fabrik, Ludwigshafen, Germany, has told a Zurich meeting of the Swiss Dyeing Specialists' Association that his firm has come up with two new dyestuffs. They are said to be especially good for polyamide fabrics and resistant to perspiration and salt water. Dr. Wurz, after describing the properties of the two processes, said they have equal potential when used on such polyester fibers as Dacron. He said they work best in dark and medium shades.

(Continued on Page 73)



# DYEING and FINISHING SECTION

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# GEIGY

DYESTUFFS

BLEACHING  
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# Dyeing and Finishing

By Hillary Robinette, Jr.

ROBINETTE RESEARCH LABORATORIES INC.

The American Viscose Corp. laboratories have developed durable finishes for rayon fabrics. Among the most interesting of these are plissé glaze, and embossing finishes. Procedures are now available to American Viscose customers using the technique of Avcoset cellulose ether, formaldehyde, with and without "hand" modifiers, softeners, and water repellents. By these processes the "I 22 standard" requirements for washable rayon fabrics can be met and exceeded.

Shrinkage control and durability of finish is a must for this type of work and many selected fabrics so treated exhibit good "ease of care". Since rayon can be obtained in variations such as continuous filament, low and high deniers, long and short staple, etc., it is possible to make many variations of fabric construction. Therefore, unlike cotton, rayon can offer many fabrics for finishing rather than the conventional 80 square which is normal wash and wear for cotton. Linen-like fabrics of rayon are good examples.

Basically, all these durable finishes depend upon formaldehyde and an acid catalyst plus a film forming polyhydroxy ether contribution such as Avcoset WS (a water soluble cellulose ether.) This combination gives the reaction with the cellulose which cannot be broken down short of fabric destruction. The hand modifiers, used for this purpose, can be selected cyclic urea-formaldehydes, a few modified melamines, long chain water repellents of the Zelan type, silicones, and other softeners. A few particularly polymerized resins can also be used in low percentages for hand modifiers. It must be remembered that in the presence of this concentration of acid-formaldehyde that the chlorine retentive character of nitrogen containing resins is lessened. The resins suggested for use with Avcoset procedures show no danger from chlorine retentive damage in the recommended formulations.

Plissé effects are made on fabric which is first treated with the basic Avcoset. Directly after curing, the fabric can be run through the gum caustic printing followed by a short swell period or ageing, neutralizing, washing and relaxed drying. The effects obtained are completely washable and durable. An advantage of this fabric is that it can be applied to a full range of rayon fabrics from pigment taffetas to challis without the harsh hand normally associated with plissé effects.

Embossing and glazing are both practical with Avcoset formulations. The effect obtained on rayon is more durable than it is on cotton. The wide range of fabrics bases offers wide possibilities to the converter. In the case of these finishes the formulation is applied, partially dried, and, with approximately 15-25% moisture present, the goods are glazed or embossed, cured, washed, and frame dried. Crepes, taffetas,

challis, and gabardines can be modified in many interesting ways by the use of these techniques. The temperature of embossing must be 300°F. or above and the degree of moisture at the time of embossing must be held reasonably constant in order to maintain regularity of effect. Considerably less pressure is required than is used on cotton.

Another chemical finishing process likely to become commercially important involves the use of deacetylated chitin as a shrinkage control agent for fabrics constructed of wool. The Kylan Corp. has developed a process for isolating from shrimp shells deacetylated chitin which, when dissolved in dilute acetic acid and blended with necessary softeners, can be applied to woolen or worsted fabrics by padding techniques and dried under conditions capable of driving off the acetic acid.

This treatment imparts a high degree of shrinkage control to woolen and worsted fabrics. Results indicate that fabrics having a normal washing shrinkage of 40% can be reduced to a level of less than 5% shrinkage through the application of about 3% of the deacetylated chitin based on the weight of the fabric. In many instances shrinkage as low as 1% to 2% can be achieved on certain woolen construction even after a series of twenty washings under conditions normally used for the laundering of cotton fabrics.

Concurrently with the promotional and research effort placed on "wash-and-wear" fabrics, there has developed a requirement for more permanent softeners to modify and contribute a marked "hand" to the wrinkle-resistant fabrics. Both synthetic fabrics and the cellulose reactant treated cottons require softeners. Water-repellents of Du Pont's trademarked product, Zelan, and American Cyanamid's trademarked product, Permell, or silicone types have been used in increasing amounts to impart durable softening effects. The amounts usually required to impart softness are substantially less in most instances than the amount required to contribute a high degree of water repellency. More recently emulsions of polyethylene have been introduced as "hand" modifiers and abrasion resistant finishes.

A new development utilizing a novel reaction leading to a cationic compound of high molecular weight, suitable for imparting durable softness to natural and synthetic fibers, both resin-treated and natural finish, is under investigation in semi-commercial finishing plant trials at the present time. This compound, which shows a high degree of compatibility with the resin-finishes and cellulose reactants now being used, is effective at low concentrations and imparts little or no water repellency. At the same time this compound contributes a high degree of lubricity and an acceptable soft "hand". Because of the rule

(Continued on Page 48)

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Syntharol ND

Technical Bulletin 134 —  
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Technical Circular 56 —  
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\*Dacron polyester fiber is a product of E. I. duPont.

## Dyeing and Finishing

(Continued from Page 46)

of the U. S. Patent Office now in force regarding publication, details of the chemistry of these new compounds cannot be divulged at this time.

Developments in the field of water-repellency have kept pace with the increased use of synthetic hydrophobic fibers. As might be expected, the proponents of natural fibers—cotton and wool—have recognized an advantage of the hydrophobic fibers: their tendency toward quick drying. As a result, the chemical industry has been asked to develop suitable materials to increase the hydrophobicity of the natural fibers. Although wax repellent finishes are still used to some extent, requirements for water repellents having greater durability have resulted in the development of—in addition to the more well-known products Zelan and Warwick Chemical Co.'s trademarked product Norane—products based on the silicone resins.

These new silicone resin water-repellents have shown excellent durability to washing and to dry-cleaning. They likewise have a modifying effect on resin finishes and cellulose reactant type finishes imparting an improved tear-strength, improved abrasion resistance and improved sewability. Closely related to the development of new silicone resins for water-repellent treatments has been the further modification of silicones to achieve, in addition to water repellency, some degree of over-all soil resistance. The Dow Chemical Co. is presently marketing a silicone treatment with the trademarked name "Silmer" and it is reported to be effective as a stain-retardant as well as a water-repellent.

Recently, the Minnesota Mining and Manufacturing Co. announced a new spot and stain resistant treatment for both apparel and decorative textiles. This treatment is based on the use of a high molecular weight fluorine containing compound and is marketed under the trademarked name "Scotch-guard". It is re-

ported that this product will impart to fabrics finished with it a high degree of resistance to staining by oily soils, as well as a high degree of water repellency.

Also related to soil resistance, there has been developed for commercial application and for use in the home, suitable finishing treatments for imparting a high degree of soil resistance to floor coverings, carpets and upholstery materials. These products are aqueous colloidal dispersions of extremely fine, uniform size particles of silica. In addition to the use of the colloidal silica, dispersions of alumina likewise have been used commercially. One theory proposed for the effectiveness of products of this type in increasing the resistance to soiling involves use of the material as a transparent "clean" soil. When sprayed on the fiber surfaces it blocks the sites where offensive, "dirty" soil normally would be fixed to the fiber.

Although no extensive commercial market has been developed for flame-resistant fabrics, researchers have continued in an effort to produce suitable permanent flame-retarding agents for use on fabrics. A military requirement does exist for treatments which will improve the resistance of fabrics to thermal radiation. Researchers at the Southern Regional Research Laboratory of the Department of Agriculture have reported the development of several treatments effective for imparting a high degree of flame-resistance to cellulosic fabrics.

These treatments are identified as the (1) T.H.P.C. treatment which involves the use of tetrakis hydroxy methyl phosphonium chloride and methylolmelamine, (2) the B.A.P. treatment which utilizes a polymer of bromoform and triallyl phosphate and (3) the P.N.E. treatment which is the allyl ester of phosphonitrile chloride. Very recently the same laboratory reported two new modifications: N N' N" Triethylene phosphoramidate + THPC and N N' N" Triethylene thio phosphoramidate + THPC. A finish based on the use of the thio-urea-formaldehyde resin for flame-proofing nylon has also been introduced.

## Future Fiber Materials

At the recent annual meeting of the Textile Research Institute in New York City, Prof. Herman F. Mark, spoke on "fiber forming materials of the future." He is director of the Polymer Research Institute of the Polytechnic Institute of Brooklyn, and a leading authority on the chemistry of fiber materials.

The following is a summary of his talk:

Application of molecular engineering principles coupled with better control of reaction conditions in the production of polymers will create cheaper synthetic fibers endowed with improved qualities in the years ahead.

Progress will be made along two principal lines:

1. A great deal of development will not involve new materials, but will come about as the result of better control of the polymerization reaction. We have to ask ourselves if we are making the right kinds of polymers at present. The answer is, of course, that we aren't. We should be turning out polymers formed of molecules of uniform size rather than molecules with a wide range of sizes. Advances in instrumentation will permit production of polymers with more uniform molecular size and the use of continuous methods in place of the current batch techniques.

2. Substantial progress will be registered by using new monomers such as those obtained from the petrochemical industry: for example, the higher homologues of ethylene. These, when polymerized under appropriate conditions, result in long molecules suitable for making fibers.

These new fibers will find their greatest end-use in the industrial fabrics field and particularly in tire cords. For example, there is presently enough know-how to turn out a polyamide with a higher melting point and better high temperature properties than those of nylons currently in use.

Looking for ways for improved utilization of materials that we have at present, it is probable that multi-step operations will replace current one-step methods. To put it simply, instead of mixing all the ingredients in one kettle the scientist will be able to produce intermediate products and mix them in combinations to achieve the fiber properties and qualities he wishes by using molecular blending and graft polymerization techniques.

This work with fibers may be compared with metallurgy. For thousands of years man had only one or two well-known alloys. As metallurgists studied the various molecules and learned how to put them together, we obtained metals of varied and improved types. The same thing can come about in the fiber and fabric field.



## For the DYER and FINISHER

### New Dyes Offered

Arnold, Hoffman & Co., Inc., an Imperial Chemical Industries, Ltd. affiliate, has announced new dyeing developments, including Procion dyes described as a completely new idea in dyestuff manufacture. Results are reported excellent when the Procions are used for dyeing cellulosic fabrics, nylon and allied polyamides or for printing on cellulosic fabrics, wool and natural silk.

The company's new technical bulletin No. 134 describes a completely novel cationic softener, Ahcovel X57, which is said to perform effectively on cotton, viscose and acetate rayons, nylon, Orlon, Dacron, and Darlan, etc., and to be of considerable merit in both pure and resin finishes. Another bulletin, No. 132, describes Arnold, Hoffman's Synthrapol PWS, a non-ionic surface active agent. For further information write the editors.

### Hart Textile Resins

Hart Products Corp., has announced the addition of three new products to its line of thermosetting textile resins. Hartoresin S-50 is offered as a high-solids, stabilized urea-formaldehyde resin syrup for use as a stiffening agent for nylon net materials.

Hartoset F-60 is a modified urea-formaldehyde resin for stiffening and flame-retardant finishes on nylon laces, nets and shoe cloth. Softolene A is a synthetic wax emulsion for use as a softener in resin formulations for cotton stabilization.

Hart Products also has developed Hartex Retarder A, a dyeing auxiliary which is said to yield level light-shade dyeings on Orlon with cationic dyes. For further information write the editors.

### Chromspun Color Card

A new color card of basic Chromspun home furnishing colors has been prepared by Eastman Chemical Products, Inc. for mills, converters, and manufacturers. The card illustrates colors in which Chromspun solution-dyed acetate may be had. This acetate is said to have superior color fastness with protection against sunlight, atmospheric fumes, crocking, washing, and dry cleaning. Copies of the color card may be obtained by writing the editors.

### Sandoz Dyeing Bulletins

New bulletins describing the company's latest dyes and developments can now be obtained from

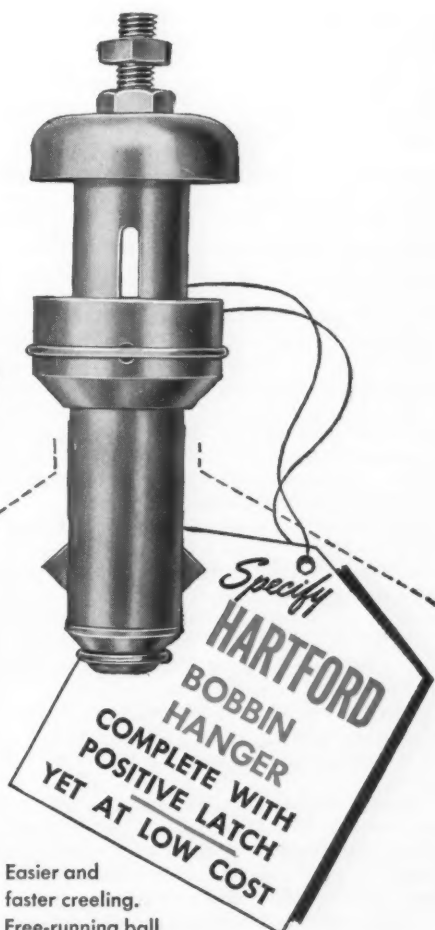
any district sales office of Sandoz, Inc. The literature includes: a booklet containing data on the copper and manganese content of the 401 Sandoz direct dyes and should be of particular interest to dyers and finishers working with latex-treated textiles; a leaflet on Lumicrease Bordeaux 3LR, a new direct dyestuff said to possess extremely good fastness to light, perspiration and crocking, and suitable for automotive and decorative fabrics, and a folder on Lanasyn Bordeaux GRL, a new addition to the Sandoz line of neutral dyeing premetallized dyes for wool, silk and nylon.

For further information write the editors.

### To License Formula

Universal Dye Works, Inc., Philadelphia, Pa., has announced it will license manufacturers, converters and dyers of sweaters made of acrylic fibers to finish their garments with UT-Formula. This new Universal finish is said to make sweaters and other garments of Orlon and Acrilan permanently pill-resistant. Product tags, supplied to licensees, can be attached to the products. Copy on the tag points out the sweater is pill-resistant, the tensile strength has been increased, it washes cleaner and dries faster, and has a bacteriostatic finish which acts as an odor masker.

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# Vat dye printing

## without starch

Printing vat dyes with an oil-water emulsion instead of starch costs less, yields better color values, and brighter shades

**T**EXTILE printing may be described as the controlled application of a viscous solution of coloring matter to local areas of a textile fabric to produce colored designs or patterns.

In vat color printing, the required viscosity of the printing paste is usually achieved by the use of an aqueous starch-British gum combination. In addition to the starch-British gum thickening agents, the vat dye printing paste also contains the alkali carbonates, reducing agent and humectant necessary for reduction of the printed dye to its leuco state during the steam "ageing" process after printing.

After "ageing" the vat dye printed fabric is treated in an oxidizing bath in order to convert the vat dye leuco to the oxidized form. The fabric is then scoured in a hot detergent bath to remove the chemicals and thickening agents deposited during printing, and to develop the true shade and fastness of the vat dye.

Removal of the starchy ingredients of the printing paste from the fabric during the normal scouring operation is difficult and complete removal of the starch can only be accomplished by costly and time-consuming rescouring or desizing.

The presence of starch in the completely processed vat dye printed fabric is objectionable from the standpoint of the stiffness which it imparts to the fabric, and because it interferes with the application of resin finishes to the printed goods.

American Cyanamid Co. has introduced a method for printing vat dyes from an oil-in-water emulsion which represents the first major improvement in this art since its inception. This emulsion system is covered by Cyanamid's Patent No. 2,597,281.

Printing vat dyes from this emulsion system not only eliminates the troublesome starch found in conventional vat dye printing pastes, but offers many significant advantages in cost, color value, brightness of shade, running properties, and in the preparation of the emulsion as compared to the conventional vat gums.

Briefly, Cyanamid's vat dye emulsion printing system consists of a low-cost hydrocarbon solvent emulsified into a water solution of the emulsifying agent, emulsion stabilizer, alkali carbonates, sodium formaldehyde sulfoxylate and humectant.

The emulsifier is an inexpensive sodium lignin sulfonate and the emulsion stabilizer, which also acts as a bodying agent for the emulsion, is a high viscosity, cold water soluble, carboxymethyl cellulose. The emulsion stabilizer is not restricted to carboxymethyl cellulose, but can be a sodium alginate, cold water soluble starch, ethers, or Guar gum. Combinations of these gums present advantages in certain printing processes over carboxymethyl cellulose alone.

The humectant used in the emulsion system is sucrose. It yields greater color value in the emulsion

system than when glycerine is employed as the humectant.

Since all of the components of the emulsion are cold water soluble, no heating is involved in its preparation as contrasted to the cooking necessary in the preparation of conventional vat color printing gums.

The emulsion can be formulated to give any desired concentration of carbonates and sulfoxylate, and its viscosity is easily regulated by a variation of the water-solvent ratio. It can be prepared with homogenizers of the Eppenbach and related types of tools found in the print works color shops.

The vat dye pastes now used in conventional vat color printing are compatible with the emulsion and may be incorporated in the emulsion by hand or mechanical stirring.

Application, resist and white and color discharge styles of printing are possible with the emulsion system and it can be used for both machine and screen printing of vat dyes. Excellent white and colored discharges are obtained with this system.

Since the viscosity of the emulsion is achieved mainly by virtue of the fact that it is an emulsion and contains only a small amount of a cold water soluble gum, prints made with it are soft and require only an "open soaper" scouring to free them of all chemicals and gum.

As a result of extensive machine and screen printing trials versus conventional vat printing gums, the following advantages have been brought to light:

- (a) Cost per gallon of emulsion is lower than conventional vat gums.
- (b) Vat color prints are brighter and, in general, somewhat stronger.
- (c) Mark is sharper.
- (d) Linting properties are superior.
- (e) Blotches are more uniform.
- (f) Prints oxidize faster and require very little soaping. This eliminates "soaper" bottlenecks in plants having high speed agers.
- (g) Open soaping effects complete gum removal giving a soft hand to the fabric and in condition for resin finishes.
- (h) Shallower engravings may be used to roller print vat colors.
- (i) Rapid penetration of emulsion prints into the fabric in screen printing permits immediate overprinting with other screens making up a pattern.
- (j) Vat colors may be screen printed even in very humid weather.
- (k) Emulsion screen prints dry more rapidly on the table.

The emulsion method of printing other classes of dyes and fibers is being investigated. ■

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# SPOT DESIGNS

By Victor Lobl

## Spot and Stripe Combinations

In making fabrics for apparel use the ever present question is that of style. Even though the general construction of the style is duplicated, the purchaser of these fabrics insists that the decoration be new and different from that of last season or from what others are offering for sale. Considerable scope for variation is afforded by combining the spot designs with stripe effects.

Consequently we find a good many spot weave fabrics decorated by stripes of various kinds. These stripes may vary in width, color, weave, type of yarn, and in any combination thereof that may strike the fancy of the designer. They may run warp-wise, filling-wise, simultaneously in the warp and in the filling direction to form checks or at an angle to produce diamonds. Representative designs of such ideas will be found illustrated in Figs. 111 through 116.

Before going any further in the discussion of the subject, it may be well to point out, that as in the preceding articles, our chief consideration still remains with spot weaves made by means of one warp and one filling system i.e. without extra warp or extra filling. Though the warp or the filling may be crowded at places in order to form a stripe effect, still every end and every pick constitutes an integral part of the fabric construction. Any part of it, if removed, would leave a gap in the texture. In the examples illustrated here, all ends, including those

forming the spot figure, as well as those producing the stripe effect, are intended to be withdrawn from one beam.

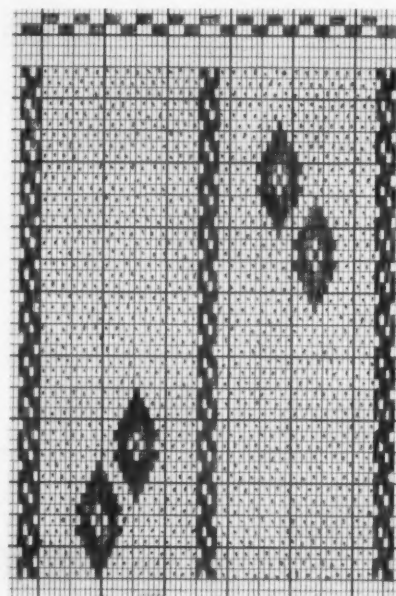


Fig. 112—Spot Weaves separated by Satin Stripes

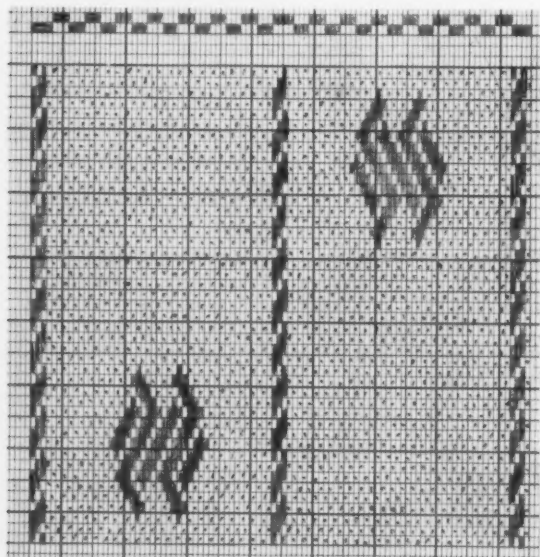


Fig. 111—Spot Weaves separated by Twill Stripes

With the foregoing in mind let us return to Figs. 111-116 for further examination of the spot-stripe and spot-check combination designs. These combinations can be exceedingly decorative provided the degree of prominence given these stripes does not obscure less distinct spot figures. Stripes of striking prominence tend to subdue the less readily seen figure weaves. For example, if color contrast is employed to produce the stripe effect, it usually becomes necessary to apply a color contrast for emphasizing the figure outline, also, in order to secure the proper pictorial balance of the decoration.

Aside from using colored yarn, stripe effects may be obtained as follows:

- a. By means of a contrasting weave.
- b. By crowding this portion of the warp in the reed.
- c. By skipping dents in the reed.
- d. By crowding a band of filling through the use of a let-back motion.
- e. By introducing cord threads in the warp or filling or both in the warp and filling direction.
- f. By introducing novelty yarn or a yarn that produces a contrasting light reflection to the regular warp and filling.



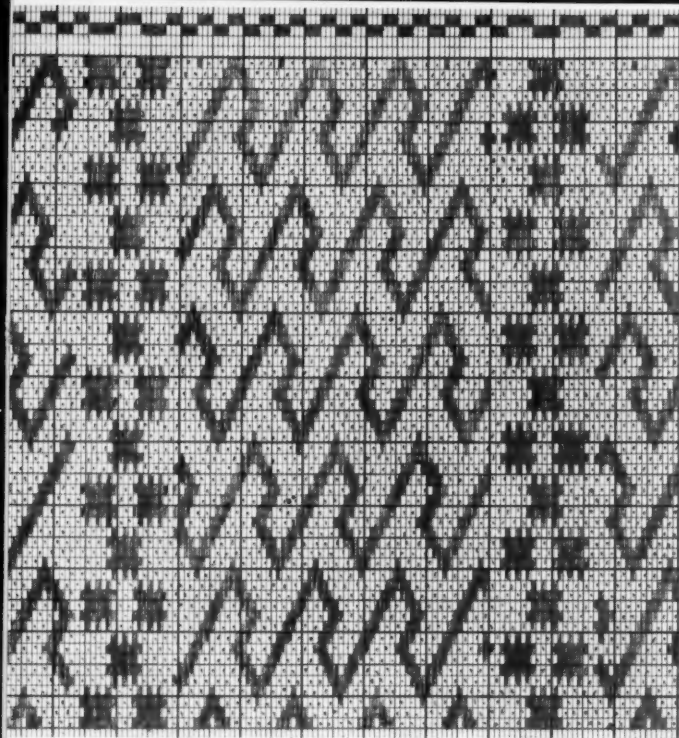


Fig. 113—All-over Design interposed by fancy Stripe

The above list is not intended to be complete as other methods are available too. However, the most commonly used methods are included.

On reference to Figs. 111, 112 and 113, it will be noted that the spot figures have been prominently separated by narrow bands of fancy weaves. In Fig. 111 a fragmentary four harness twill has been employed in contrast to the tightly woven plain ground. In Fig. 114 a similar effect is obtained by a band of four harness satin. Fig. 113 features rows of small block motifs which are spaced apart sufficiently to insure uniform take-up with the rest of the warp. In all three examples the stripe effect has been further accentuated by crowding these ends in the reed as will be noted in the reed drawing designation right above the weave diagrams.

Crowding a number of ends in the reed in contrast to the ground weave in itself produces a stripe effect. This method is frequently applied to sheer fabrics such as voiles, tissues, etc. However, such stripes, while presenting a distinct band, do not produce a raised appearance in the cloth. In the designing of raised stripe effect the crowded reeding and the looser weave are applied together for two reasons:

- a. This combination increases considerably the prominence of the decoration.
- b. The comparatively denser reed draw tends to offset, to some extent, the deficiency in take-up caused by the fewer bindings in the loose stripe weave.

The method of cramming depends on the degree of prominence desired. A common practice is to draw double density that part of the warp. This is to say that where the ground is reeded two ends per dent, the stripe is crowded four ends in a dent (Fig. 114). In heavier sley fabrics where the ground is drawn three ends per dent, the more likely practice is to draw the stripe five ends to a dent. (Fig. 113)

As is to be expected, many variations and modifications of the reed draw may be worked out by the designer to attain the right balance of appearance and warp take-up. Under certain circumstances the crowding is arranged to come out even with the repeat of the weave. For example, stripes of five harness satin weaves frequently are reeded five ends to a dent though the ground construction is entered only two ends to a dent. In some instances it becomes necessary to raise the stripe denting to six ends per dent in order to improve the take-up condition. Sheer fabrics produced of fine yarn are often drawn triple density in the stripes for the purpose of building sufficient contrast to the decoration.

On reference to Figs. 111 and 112, it will be seen that the denting plans, which are indicated directly above the respective designs, are different again from any of the methods mentioned before. In both instances the ground weave is reeded three ends per dent. The stripe weave of Fig. 112 is composed of four ends. These are drawn in a dent by themselves for additional emphasis. Conditions are somewhat different, however, in the case of Fig. 111. Since there are only three ends in the stripes it was necessary to borrow one end from the ground to bring about a crowded condition.

Designers avoid mixing ends of different weaves in the same dent though there is nothing unusual about it in ordinary mill practice. To be sure, it has to be handled with a good deal of caution. When the take-up variation between the two weaves is small, as it is here the case, no unusual difficulty in weaving need to be feared from this cause. However, where the take-up variation is greater, the slack ends tend to wrap around the taut ones thus causing warp stops or even break-outs, or at least a rough, uneven appearance.

One more point to be noticed in the reed draw of Figs. 111 and 112 is the slight cramming of the stripes, which is only four ends on a three ends per dent ground. The underlying purpose for arrangements of this kind is to reduce the accent on the stripes for

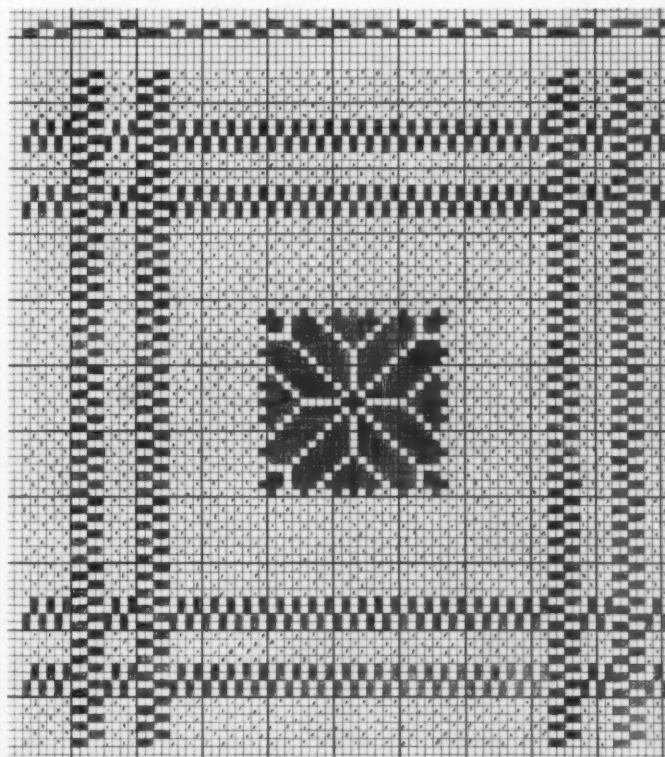


Fig. 114—Rib Check and Spot Weave Combination

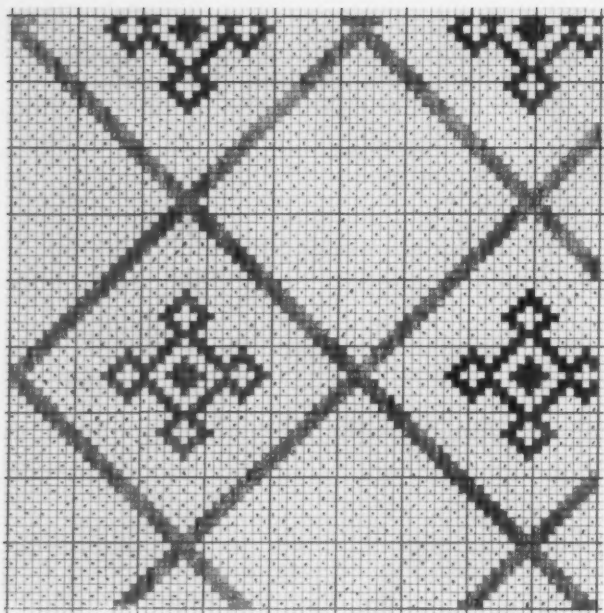


Fig. 115—Spot Figure in Center of Diamond Weave

the sake of balance in the overall appearance. In contrast, the five ends per dent reed draw of the stripes in Fig. 113 assures a more distinct display of this decoration. Fig. 111 represents a simple spot figure arrangement that is separated by three ends weaving in twill formation. The neat appearance of the decoration is enhanced by the staggered figure distribution. In Fig. 112 the spot arrangement follows the four harness satin distribution. The spot grouping in pairs combined with the method of reversing produces a neat mixed effect. The four harness satin stripe adds to the attractiveness of the arrangement.

A noticeable feature of Fig. 113 is the interlocking pattern that spreads from stripe to stripe across the width of the fabric. This idea produces an attractive full effect which is in line with the current style trend.

#### Rib Effects in Combination with Spot Weaves

Probably the simplest and one of the most frequently employed stripe decorations in the apparel fabric line are ribbed or corded effects. This ornamentation applied to any fabric will improve its wear strength and will augment its surface interest. In combination with spot weaves the rib effects offer an additional vista of style possibilities thus enhancing the sales appeal of those fabrics.

Rib or corded effects may be obtained by introducing thicker warp or thicker filling in the fabric at the desired intervals, by bunching two or more warp threads or picks together in form of a rib weave, and by varying the warp or filling density at the proper points. Accordingly we distinguish between long ribs running lengthwise with the warp, cross ribs running crosswise with the filling or a combination of both for check patterns. The effect may be made more or less distinctive according to the motive desired.

In reality a cord is two or more strands of yarn twisted together and woven into the warp or filling to produce a raised cylindrical effect. The term is, however, implied also, when two or more ends or picks are weaving alike in order to produce a corded or ribbed effect. In the warp rib the filling lies straight in the shed and the warp is forced to bend around it, conversely, in filling rib the warp lies

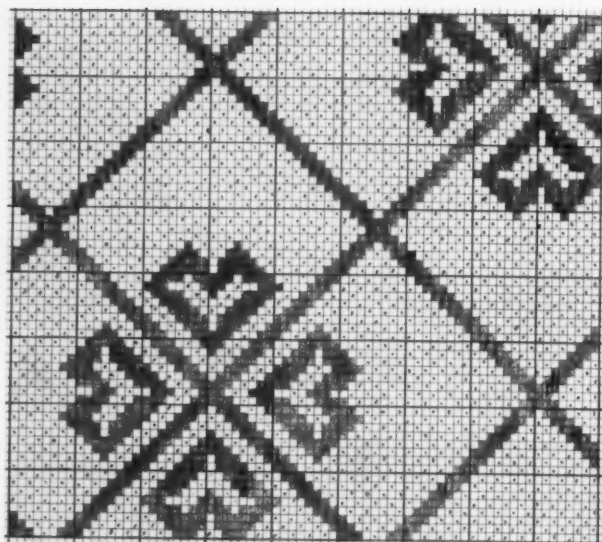


Fig. 116—Spot Motif in four different Positions around Hub of intersecting diagonal lines.

straight and the filling bends around it. (See Fig. 114) The prominence of the rib is increased if the straight lying threads are coarser than those bending around them.

In Fig. 114 the square is used as the basis of elaboration. Two warp ends are laid side by side and woven as one. These are varied by another pair of ends weaving in similar manner, but breaking with the others. This method of weaving produces a flat rib stripe. By observing Fig. 114 it will be noted that the rib stripe in the warp is reeded four ends per dent. This is twice as dense as the two per dent reed draw in the body and it will further accentuate the appearance of the rib stripe. In order to produce similar prominence to the cross ribs, the number of picks at this point must be increased in about the same proportion, i.e. two picks in the space of one in the ground weave. This crowding of the picks is accomplished by means of a let-back arrangement on the loom. The let-back stops the take-up gear for as many picks as desired. It is controlled by pegs in the dobby chain. In Fig. 114 it is desirable to let back alternately for four consecutive picks. The usual objective is to make the filling effect as prominent or slightly less prominent than the warp effect, if not, an objectionable unbalance of the decoration may result. This is an important point to observe because the let-back motion does not work the same on all types of looms. On some looms one peg of let-back will stop the pick wheel for one additional pick, in others it will mean the addition of two picks. By actual experience it has been found it is not always feasible to use let-backs for corded effects comprising a few picks only. When the cord is produced by placing two or three picks in one shed there is a natural tendency of the reed to beat up these picks closer together than the pick gear indicates. In such instances, an addition of a let-back would increase the picks in the cloth beyond what is normally required.

#### Spot Weaves on Diamond Base

Figs. 115 and 116 illustrate the ground work for additional spot and stripe combinations. The chief point to be noted here is that diagonal lines are joined

together to form diamond enclosures and enough space is allotted between the lines to accommodate figure weaves. It is not necessary to fill the entire space or every diamond with figure designs. Sometimes an unfilled diamond or a liberal margin around the spot makes little figure designs more appreciable. Fig. 115 illustrates a diamond design on plain ground in the center of which a geometrical figure has been added for more attraction. Fig. 116 features the same foundation as Fig. 115 but it will be noticed that the

spot design has been employed in four different positions around the hub.

In conjunction with the above design combinations, it will be well to point out that twill weave stripes resists slipping best at a 45° angle. The closer the warp twill approaches the vertical or a filling twill the horizontal, the easier such lines are displaced if subjected to push, pull or friction. Difficulties of this nature may be overcome by spacing the intersections at closer intervals.

TO BE CONTINUED

## Tarshes and Roaman

(Continued from Page 32)

During these years of growth, Reliable has not lost its pioneering willingness to try new fibers and new fabrics. It has had nylons in its line for years, and was one of the first converters to move ahead into wash-and-wear fabrics of Dacron-cotton. Working closely with the fabric development specialists on the staff of the yarn producers, Reliable has brought out other wash-and-wear fabrics of Orlon and Acrilan, and it has a variety of Cupioni items in its present line. The newer synthetics, Tarshes and Roaman believe, have given an immense dynamism to the textile industry, and provide a continuous series of new profit opportunities for alert converters.

Taking stock of their present status, Tarshes and Roaman have sound reasons for feeling that their business policies have stood the test of events and have proven sound. Reliable Textiles is a big business; it enjoys the position of being one of the most substantial and widely respected converting houses in the country. As an indication of its importance consider this one fact alone: last year the firm bought more than 25 million yards of gray goods—a figure that will impress any mill executive as he struggles to keep his cloth inventories from climbing too uncomfortably high.

The overall impression an observer gets of Reliable is that the firm is a down-to-earth, hard working outfit. Alan Roaman, Irving's elder son who along with his brother Richard is now active in Reliable's management, puts it this way: "We have done well in this business because all of us—from the principals of the company down through our newest salesman, work hard at our business of styling and selling fabrics. Our executives have no other big interest in life but to make this firm go and keep it going and keep it earning profits. There is nothing any of us wouldn't do to achieve this end—if necessary any of us would be willing to take a broom and sweep up the stockroom. We're not proud, and we believe in hard work, and long hours. That's the way you have to be in the converting business. It's a tough business and when you're no longer willing to work hard, you might as well find something else to do."

But George Tarshes, Irving Roaman and his sons, along with such key men at Reliable as Andrew Skapley, credit manager, Milton Landis, head of men's and boy's wear sales, Irving Franklin, in charge of Reltex of California, and Joseph Hanley, in charge of over-the-counter sales, have no intention of switching to other fields. They like the hard work, the long hours, the unrelenting effort that has brought them the intense satisfaction which is their biggest reward for making Reliable Textiles the solidly established, and truly "reliable" converting operation it is today.

## Many Names of Nylon

(Continued from Page 34)

The fact that all nylons are not alike is recognized by the polyamide fiber producers themselves. In their respective advertising and selling efforts, each has tried to deal with the fact that nylons differ. Du Pont has the advantage, of course, of being the original nylon producer and can benefit from the prestige of being first in the field. Chemstrand, the second company to make nylon in the U. S. acquired its original process and much of its technical knowledge through licensing arrangements with Du Pont. To get away from the taint of "me-tooism", Chemstrand has artfully stressed in its sales effort the modernity of its equipment and its high degree of product uniformity insured by a rigid system of quality control.

Industrial Rayon in its advertising has stressed that its fiber is the "new IRC nylon", while American Enka has given its nylon a brand name "Nylenka." Going a step further, Allied Chemical & Dye Corp. has given its nylon a name, "Caprolan," which it identifies in its advertising as "Allied Chemical's

polyamide fiber." In other advertising, Allied has described Caprolan as a "new concept in nylon."

This is how the merchandising picture is shaping up for the polyamides. It is getting harder and harder to talk about nylon without specifying what kind of nylon or whose nylon. And this trend is likely to grow stronger as more nylons appear on the market. Each producer, in its advertising and sales effort, will stress the advantages of its fiber. And in research and development work, each producer will strive mightily to enlarge these advantages as compared with the polyamides of competitors. New ones will be derived from new raw materials. Each producer will tend more and more to give its nylon some special brand name or designation as Industrial and Enka and Allied Chemical have already done.

In other words, the producers of nylon will probably more and more be "naming their nylons." And as the specific properties of the various nylons grow more and more distinctive and better known, the millman himself will tend to "name his nylon" in order to be sure that he is getting the polyamide fiber best suited for the end use he has in mind. ■



## REPORT FROM JAPAN



### **Japanese overproduced on rayon staple; weavers are hopeful of selling more rayon cloth in U. S.**

**By B. Mori**

OSAKA—Producers of rayon staple fiber are conducting a coordinated production cut-back program to ease up inventory pressure which had accumulated all along supply line in manufacturing industries. Production of staple this year will be close to record figure of 1956, but considerably below 700-million-pound total which might easily have been reached, or possibly exceeded, in 1957.

The curtailment program affects chiefly those companies which added production capacity most recently. It is worth noting, however, that the curtailment does not at all dampen enthusiasm of industry for further plant expansion. Outlook is still for much larger domestic and export consumption several years hence.

**Output Has Already Declined**—Production figures started to dip even before curtailment plan went into effect. Production in February was 39 million pounds, lowest for any month in more than two years. Average for the first three months was 44 million pounds, compared with an average of 56 million in 1956 (a high of 62 million and low of 48 million).

Helping to work off the backlog is an active export business. Preliminary indications are that, for the first three months of 1957, shipments of staple, spun yarns and spun fabrics were all well ahead of the first quarter of 1956.

**More Rayon Fabrics for U. S. Market?**—Increasing American buyer interest in rayon fabrics and in rayon apparel has been attracting the attention of competing American industries. The Japanese exporters are aware of, and disagree with, the feeling that a shift of production from cotton to rayon would be a "violation" of the quota arrangement (which, of course, apply specifically to cotton goods).

There is no evidence yet that export sales of rayon blouses or sport shirts or other items have been more than slight, even though larger than in past few years. Belief here is that importers are testing the items in the American wholesale market. An unfavorable tariff in comparison with cotton goods tends to hinder business in rayon products with the U.S.

**Japanese Seek Markets for Finished Goods**—Sewing factories are, of course, eager to find new work for their machines, now that the cotton products quotas prevent them from working up new lines for U.S. market.

For the same reason, the principal focal point of Japanese dissatisfaction with the present quotas is probably the "miscellaneous goods" categories, which prevent these factories from expanding in items which had just begun to become commercially important when quotas were imposed and "froze" them at rather small quantities.

**Raw Silk Supplies Currently Tight**—The raw silk market has felt the pinch of end-season production cutbacks, necessitated by the small cocoon crop in 1956. The port stocks have been almost bare of the most desirable export qualities. A continued high level of domestic consumption has more than offset smaller exports in the first few months of the year, to add to the tightness.

This situation is in contrast to the Government's first estimate of the spring cocoon crop, almost 20% above the same last year, and the highest in the postwar era. If justified by the weather, this will ease the supply situation by late June and July.

S. Tashiro, president of Toyo Rayon Co., Ltd., has stepped down as president of the Japan Chemical Fibres Association, after guiding it through the industry's era of postwar reconstruction. The influential and active association is now headed by E. Kashu, president of Mitsubishi Rayon Co., Ltd.

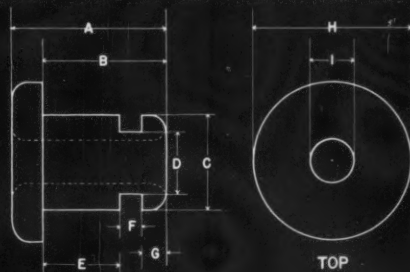


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No. 1596	$1\frac{3}{64}$ "	$\frac{5}{32}$ "	$1\frac{3}{64}$ "	$\frac{3}{16}$ "	$\frac{3}{64}$ "	$\frac{3}{64}$ "	$\frac{1}{16}$ "	$1\frac{1}{32}$ "	$\frac{7}{64}$ "
No. 2454	$1\frac{5}{64}$ "	$\frac{3}{16}$ "	.300"	$\frac{1}{4}$ "	$\frac{5}{64}$ "	$\frac{3}{64}$ "	$\frac{1}{16}$ "	$\frac{3}{8}$ "	$\frac{1}{8}$ "
No. 2351	$\frac{1}{4}$ "	$\frac{3}{16}$ "	$\frac{3}{8}$ "	$2\frac{1}{64}$ "	$\frac{3}{64}$ "	$\frac{3}{64}$ "	$\frac{3}{32}$ "	$3\frac{3}{64}$ "	$1\frac{5}{64}$ "
No. 2508	$\frac{5}{16}$ "	$1\frac{5}{64}$ "	.175"	$\frac{5}{32}$ "	$\frac{9}{64}$ "	$\frac{1}{32}$ "	$\frac{1}{16}$ "	$\frac{1}{4}$ "	$\frac{5}{64}$ "
No. 2364	$\frac{5}{16}$ "	$1\frac{5}{64}$ "	$1\frac{9}{64}$ "	$1\frac{5}{64}$ "	$\frac{1}{8}$ "	$\frac{3}{64}$ "	$\frac{1}{16}$ "	$\frac{3}{8}$ "	$\frac{9}{64}$ "
No. 1761	$\frac{5}{16}$ "	$\frac{1}{4}$ "	$\frac{5}{16}$ "	$\frac{1}{4}$ "	$\frac{9}{64}$ "	$\frac{3}{64}$ "	$\frac{1}{16}$ "	$2\frac{5}{64}$ "	$\frac{1}{8}$ "
No. 2251	$1\frac{1}{32}$ "	$\frac{1}{4}$ "	$\frac{9}{32}$ "	$\frac{7}{32}$ "	$\frac{5}{32}$ "	$\frac{1}{32}$ "	$\frac{1}{16}$ "	$1\frac{9}{32}$ "	$\frac{9}{64}$ "
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No. 2597	$2\frac{7}{64}$ "	$2\frac{3}{64}$ "	.303"	$\frac{1}{4}$ "	.245"	$\frac{3}{64}$ "	$\frac{1}{16}$ "	$\frac{3}{8}$ "	$\frac{1}{8}$ "
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# New MACHINERY

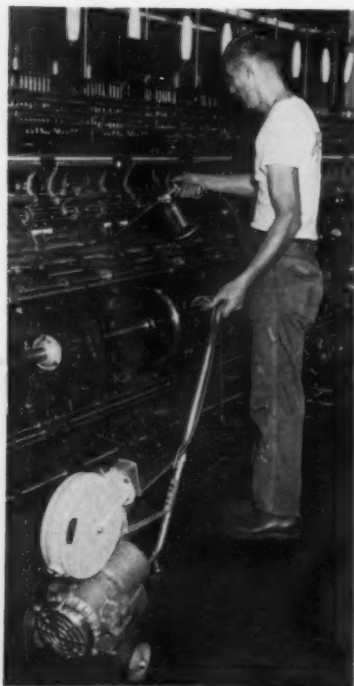
## New EQUIPMENT

### Winder for Specialty Yarns

The new Hobbs H-G winder is said to solve major unwind problems in the processing of cellophane, Mylar, polyethylene, vinyls and other tender and easy to distort materials, according to Hobbs Manufacturing Co. The simplicity of control of this winder, which applies feed back principles in their most elemental form, is said to make the Hobbs H-G model extremely easy and economical to operate. *For further information write the editors.*

### Portable Jet Flusher

Pressurized lubrication of sinker heads at regular intervals leads to increased efficiency in knitting machine operations, more uniform fabric and longer life of sinker heads and knitting elements. To provide this type of lubrication, Textile Machine Works has developed the Reading portable jet flushing device for sinker heads. This equipment consists of a standard portable air compressor and cart with a suitable spray gun; the portable jet has an automatic reel with a 50-foot extension cord. Less than a minute is required to spray the entire machine. The one-quart capacity of the spray tank is sufficient for three applications on one machine. *For further information write the editors.*



### New Edge Uncurler

An edge uncurler developed for warp-knit fabrics will be made available to reputable knitters for operation on a royalty-free basis by Celanese Corp. of America. The uncurling device supplements a photoelectric scanner which electronically inspects fabrics coming off knitting machines and halts operations when any irregularities are noted. Celanese, which holds patents on the scanner, to date has granted royalty-free licenses to 34 textile firms for operation of 1,017 individual scanning units. *For further information write the editors.*

### New Safety Devices

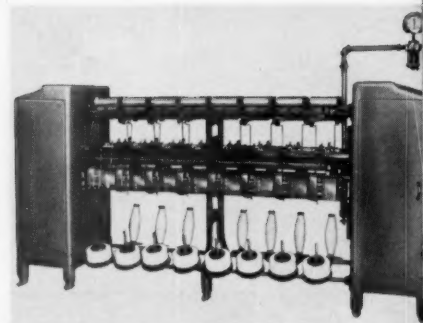
Textile Machine Works has announced two more safety features have been added to the Reading full-fashioned knitting machine. The main chain safety switch has been designed to stop the machine if chain buttons become loose or are otherwise out of alignment with one of the chain rows. The non-run safety device has been added to avoid the double dipping of the narrowing machine. This device is an electrical-mechanical one that works automatically. *For further information write the editors.*

### Saco-Lowell Installations

Saco-Lowell has installed in the Modena Plant of Burlington Industries, Inc. a #12 lattice opener, a #16 opener, two #6 automatic air filters, and three Model 56 high production combers, to be used in Modena's Opening and Card rooms. Habersham Mills has purchased eight Saco-Lowell FS-2 Roving Frames and Pepperell Mfg. Co. has purchased three Saco-Lowell Model 56 high production combers. Saco-Lowell also reports that West Point Mfg. Co. has purchased 48-4" gauge, 240 spindle Gwaltney Spinning Frames, making a total of 96 such frames purchased for use in West Point's Lanett Mill Division.

### Textile Bagger

Tele-sonic Packaging Corp. has available literature fully describing its textile bagger, a popular-priced, portable, all-metal machine for speeding snug packing in bags of any material—paper, polyethylene, cellophane. The machine is similar in basic design to Tele-sonic machines in wide use also in other industries. *For further information write the editors.*



### Textured Yarn Machine

A new textured yarn machine called the U. S. Acme Texturizer is now being manufactured by U. S. Textile Machine Co. The 60-spindle machines are being built in production and are reported to be the first efficient production units for processing textured yarns. The machine is said to offer both versatility and flexibility in the comparatively new field of bulking spun-like textured synthetic yarns. It is designed to handle both the wet or dry process of texturizing either twisted or untwisted filament yarns in a range from fine deniers to coarse deniers.

*For further information write the editors.*

### Heat Sealing Tape

A thermoplastic polyester resin tape, known as GT tape, has been developed for heat sealing Mylar, Du Pont's polyester film and a wide variety of other materials, according to G. T. Schjeldahl Co. The tape can be used in the laminating of polyester films, fabrics, metals, leather, etc., in various combinations. The heat sealing tape is available in a wide range of widths and gauges. *For further information write the editors.*

### Improved Drafting Apron

An improved drafting apron for spinning machines has been developed by the Dayton Rubber Co. to help textile mills produce more uniform yarn. The new apron is said to eliminate chattering or uneven operation of machines, in both single and multiple apron systems. Developed in two years of testing new compounds and manufacturing techniques, the apron is produced in sizes to fit every spinning frame. *For further information write the editors.*

### New Knitter Coming

Textile Machine Works, Reading, Pa., is currently working on the development of coarser gauge knitting machines, to meet the trend in bulkier outerwear garments. It is believed that they will be completed and available soon after the middle of this year.

*(Continued on Page 60)*



## **SPEED: 12,500 rpm PROBLEMS: none** **Quill winding spuns with KIDDE compensators**

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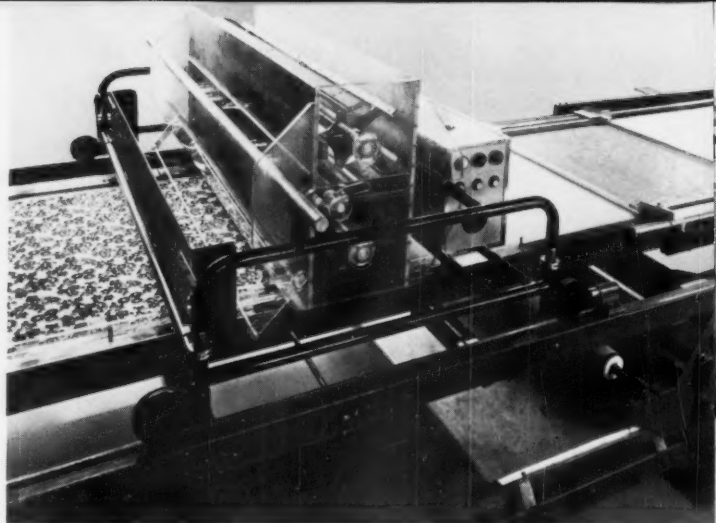
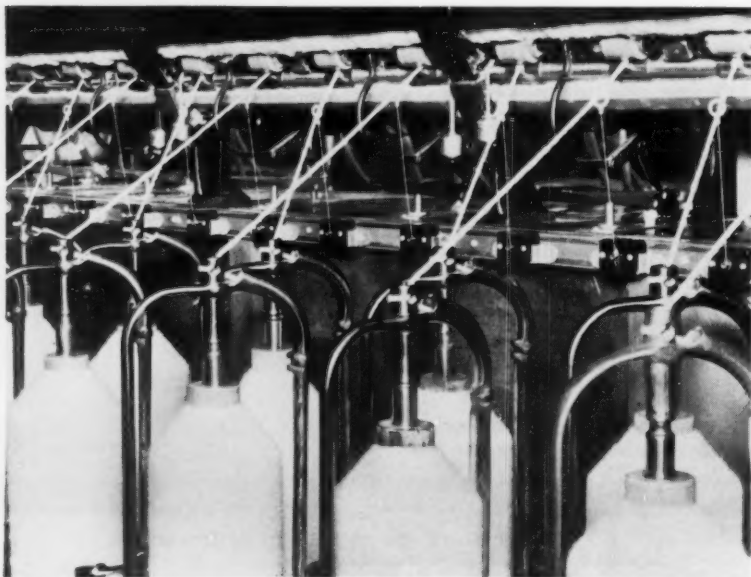
### Sweater Setting Machine

A new tray-type sweater setting machine, designed especially for Ban-Lon, has been announced by Turbo Machine Co., Lansdale, Pa. In the new machine, alternating cycles of steam and vacuum at 265 degrees F. are closely controlled with electrical timers. When a setting cycle is completed, the cabinet door opens and one carrier moves out while the other moves in. Each carrier holds 10 dozen sweaters; based on a 12-minute cycle, production up to 50 dozen sweaters per hour can be achieved. *For further information write the editors.*

### Resin Reaction Apparatus

A new resin reaction apparatus for pilot plants has been announced by the Scientific Glass Apparatus Co., Inc. Use of a new plate design, the company reports, permits use of round bottom flasks of 8,500 to 33,000 ml. capacity. Except for the metal tripod stand and clamping assembly, the entire unit is made of Pyrex brand glass. The apparatus is said to be easy to set up and take down, and can be supplied with a heating mantle.

*For further information write the editors.*



Vollenweider Flock Printer

### Flock Printing Machine

The Vollenweider & Saladin flock beamer FO-2 has been introduced in this country by Cosa Corp. The combined features of this flock beamer are said to provide increased production and a finer quality of flocked material. Electro-static flocking and electro-static flock recovery result in an upright pile of uniform density, clean contours and good definition of design. The beam operates on AC current and is said to perform without trouble or shutdowns under humid conditions, thus cutting down costly delays from variable plant humidity.

*For further information write the editors.*

### Detects Light Changes

A photoelectric instrument designed to detect light changes in the micro-lumen range is in production at Lindly & Co. In practical application, the company reports, the instrument is being successfully used in the textile industry for detecting flaws and

counting and maintaining quality control in yarn production. Variations in wire, vapor, webs or filaments of any material may be automatically detected, counted, and if desired, a stop motion actuated.

*For further information write the editors.*

### Supersensitive Indicator

Baker & Co. has announced a supersensitive indicator which can measure as little as two parts per million of oxygen in hydrogen or inert gases despite the presence of up to three percent carbon monoxide. The indicators are reported necessary for quality control, and producers of synthetic fibers and other users of nitrogen must continually check their gas supplies for the presence of oxygen.

### Roving Frame Cleaner

Bulletin F25, which describes the Parks-Cramer Co.'s roving frame cleaner, type CTFV, is now available and may be obtained by writing to the editors.

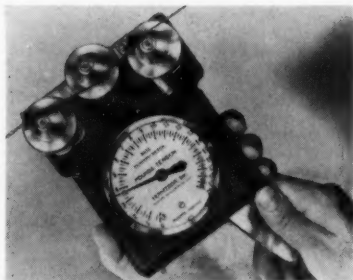
### Detects Roving Failures

A new model of the Adamstop is now available from Adams, Inc. The Adamstop is a unit which instantly detects all roving failures on textile mill roving frames. Adams states that failures, such as bobbin run over, plugged flyer, singling and breakage, are eliminated before they have a chance to cause time-consuming production problems such as lapped rolls and doublings.

The Adamstop consists of a series of nylon eyelets mounted on two-way switches. Switches are spaced so that they are located directly below the centers of the fluted roving feed rolls on the roving frame. A control box, warning light plus a builder motion switch and other accessories complete the Adamstop unit. *For further information write the editors.*

New Model Adamstop





### 20-Pound Tension Meter

A new lightweight tension meter for checking tensions during the processing of yarns, cords, and wires has been announced by Tensitron, Inc. The new instrument has a range of one to twenty pounds, with great resolution at the low tension end. It features an ingenious lever-inserting mechanism whereby two outer rollers are lowered or raised simultaneously. The rollers are tapered, thus widening the opening where the material to be tested is placed.

Wide flanges at the bottom of the low-inertia rollers hold the material securely in place while tension is read as the material travels at production speed.

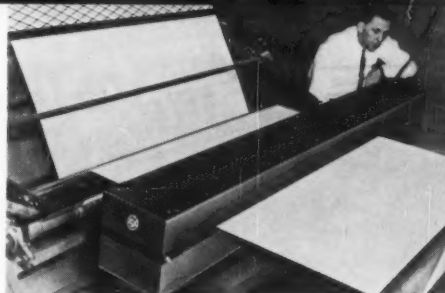
For further information write the editors.

### Transformer Maintenance

A new 50-page booklet entitled "Timely Tips on Transformer Maintenance," No. B-4716-B, is available from Westinghouse Electric Corp., P. O. Box 2099, Pittsburgh 30, Pa. The booklet discusses general inspection procedures, classification, methods of drying out, and connections.

### Industrial Orlon Felts

Chemically shrunk Orlon felts are available from American Felt Co., in weights ranging from eight ounces to eight pounds per square yard. They are suitable for use in industrial wet and dry filtration applications and other uses where a complete felt structure is preferred.



### Electronic Metal Detector

A new type of metal detector that provides continuous electronic inspection of textile fabrics in production has been placed on the market by Radio Corp. of America. Designed to protect both product and production equipment, the new textile "inspector" is said to be so sensitive that it can spot specks of stray or "tramp" metal as small as a typewritten dot. The inspection unit's overall measurements are 75 inches long, 11 inches high, and it weighs approximately 250 pounds.

For further information write the editors.

### McBride Raises Capacity

The Edward J. McBride Co. has completed new manufacturing facilities in Philadelphia that will more than double the company's capacity. McBride manufactures SRM magazine creels as well as weaving creels, burling tables, warp beams, flanges, and metal and wood rolls for the textile industry.



### Aula Changes Hands

According to an announcement made last month by W. F. Zipse, president of Geigy Chemical Corp., Aula Chemicals, Inc., a manufacturer of pigment colors for textile printing and dyeing with its office and plant in Elizabeth, N. J., has been purchased by a new corporation with the same name. The new corporation is affiliated with Geigy, and its president is Harry C. Spatz, who is also president of Geigy Dyestuffs, a division of Geigy.

Mr. Zipse stated that Geigy plans to utilize the Aula manufacturing facilities to add a line of pigment printing and dyeing colors to the established Geigy lines of azo and vat dyes. Aula's operations at Elizabeth will be continued under the general supervision of Philip R. Gelzer, formerly of the Geigy Dyestuffs sales staff.

The president of the concern which was sold was Dr. Laszlo Auer, and the vice-president was Dr. Leslie L. Balassa. Both Doctors Auer and Balassa are vice-presidents of the new corporation. Dr. Auer will be in charge of new developments and research. Dr. Balassa will be responsible for manufacture and technical service.

Sales of pigment printing colors produced by the new corporation will be under the direction of the president, Mr. Spatz. Geigy Dyestuffs will add a pig-

ment color department to its own sales staff, and Mr. William Hutz, who was a sales representative for Aula, has joined Geigy to be part of this new department. Aula will continue to sell its line of "Aulabrite" colors. Pigment colors sold by Geigy will be under the Geigy trademarks "Tinobrite" and "Tino-lite".

### Wheelco Expansion

Sales and service staffs and facilities in various areas have been expanded by the Wheelco Instruments Division, Barber-Colman Co., according to H. H. Kieckhefer, sales manager. Personnel additions include: Beryl Martin Johnson, Columbus service staff; J. Richard Manier, Cleveland sales engineering staff; Clemens Matula, sales engineering staff, and Otto Schemmel, service engineering staff at Chicago; Marion L. Jones, Grand Rapids service engineering staff; Floyd J. Austin, Los Angeles service engineering staff; George F. Draper, Barber-Colman Ltd. service engineering staff in Toronto, and James P. Whitehead is now Wheelco branch sales manager of Barber-Colman Ltd. in Montreal.

The company also announced the recent opening of a sub-branch at Columbus, Ohio, with H. J. Hoffman as manager, and the change of address of the Cincinnati office to 8016 Plainfield Road, and the Houston, Texas office to 2712 Danville.



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## NEW FABRICS

## NEW YARNS

### Print Percale Pillowcases

Riegel Textile Corp. has introduced a new pre-packed pillowcase assortment featuring metallic prints on type 180 combed percale. Riegel believes this is the first time that either printed metallic pillowcases or a complete range of type 180 combed percale prints have been offered.

### Infants' Tycora Sweaters

The new spring line of Infanta Knitting Mills, Philadelphia, Pa., will include infants' sweaters of Tycora. Until now Tycora sweaters have been available only for toddlers and teen-agers. Particularly suitable for the infant-age group, Tycora sweaters are said to have easy washability, softness, and resistance to pulling.

### New 'Everglaze' Voile

A new "Everglaze" voile called Berkmist has been introduced for 1957 summer feminine wear by Berkshire Hathaway. The new sheer comes in 17 shades. The voile is washable and crease-resistant, dries quickly, and needs only a minimum of pressing. It is shrink and stretch-resistant.

### Mothproofed Blankets

North Star Woolen Mills has introduced two new blankets which are reported durably mothproofed with Mitin, a product of Geigy. One number, the Sanford, comes in seven colors, is bound in matching seven-inch nylon satin. The other number, the higher-quality Luxuria, is a closely-napped, suede-finish blanket made of fine Australian wool.

### Dustless Sweeping Cloth

Chicopee Mills says dustless sweeping is now possible with its specially-treated, disposable Masslinn cloth. The cleaning cloth is reported to be a scientific combination of cotton and rayon fibers, treated to provide actual dustless sweeping by trapping dirt and preventing its recirculation. A non-woven, the fabric absorbs and retains dust and dirt with blotter-like action. An illustrated brochure describing the new product is available by writing the editors.

### 'Breathable' Vinyl

Designers at Chrysler Corp., Detroit, Mich. have come up with an automotive upholstery fabric said to eliminate much of the perspiration from summertime motoring. It's "breathable" vinyl, reported to be 10 times cooler than upholstery made of plain vinyl.

Chrysler stylists have designed a background fabric to compliment tiny island-like patches of vinyl. The vinyl spots are bonded to the background fabric so they can't be pulled off by probing youngsters or by rough objects scraped over the seats. The combination, the designers say results in a fashionable and functional combination.

### Synthetic Fiber Paper

A non-woven, bonded paper-like structure, made from synthetic fibers will be available from Du Pont within a year. Du Pont's synthetic fiber paper is said to show excellent resistance to corrosive chemicals, bacteria, heat and moisture. Other properties are high strength, outdoor durability, dimensional stability, and good dielectric qualities. The paper will be confined to specialty paper markets and markets now held by woven fabrics. Fibers can be obtained in 1/4" and 1/8" lengths with a diameter of 0.7 mils (3 denier).



## NEWS AND COMMENT

**TDI Protests Shorter Selling Terms**

The Textile Distributors Institute has announced its strong objections to the recent shortening of selling terms by many mills from net 60 days to 30 days. In a statement made public last month, the TDI said that the mills, "by hiding behind the ruse of claiming that this will improve the industry, they are attempting to transfer, by implication, their inefficiencies in management."

"Sound management at the mill level is the answer; changing terms is no panacea. If the mills will keep their production geared to a sensible ratio to sales, and if they will make up their minds that no matter how busy they get, this country cannot consume more than a five day production, real gains will be made."

"This action in changing terms will tend to retard a noticeable improvement in the basic condition of the industry that has slowly been taking place. When every wide-awake industrial organization in the country is studying means and methods of how to help their customer and induce him to buy more goods as a result of his help, this industry has come up with the answer that the way to help this business is to make it harder for their customers to do business."

"Furthermore, this action on the part of mills seems to prefer certain customers over others inasmuch as they are not proposing to change any conditions under which they are selling any of their fabrics to other classes of customers."

**Draft of Law to Protect Designs Offered**

A bill to protect original designs has been drafted by the National Council of Patent Law Associations. It is planned to have the bill introduced in Congress during the present session and seek its enactment into law. The bill provides for registration of "ornamental designs" for five years subject to renewal for an additional five years. Anyone infringing designs so registered would be subject to injunction and be liable to damages.

A summary of the proposed law prepared by counsel for the Textile Distributors Institute follows:

**Ornamental Designs Protected**

Authors or assignees of original ornamental designs "of a useful or decorative article", i.e., designs of articles which include features of pattern or ornamentation intended to give an article a distinctive appearance, are protected.

**Protection Commencement**

Protection commences from the time when an article embodying a design or a pictorial representation of a design, marked "Protected Design" or with the letter (D) is first made known to the public or is filed under application for registration with a proposed "administrator" of registrations in Washing-

ton. Any public exhibition or offering for public sale is considered as making the design "known to the public".

**Term of Protection**

The registration is valid for five years subject to renewal for an additional term of five years.

**Design Notice**

As indicated above, when an article embodying a design or pictorial representation of a design for which protection is sought is first made known to the public with the consent of the proprietor, it must be marked (1) with the words "Protected Design", or an abbreviation thereof, or (D); (2) month and year of the commencement of the protection; and (3) the name or initials or abbreviation of the name of the proprietor. The notice described above must be applied to the face of the article unless this would mar its appearance or be impractical. Where an article bears repetitive designs which are protected, the notice must be applied to each repetition of the design or on the margin or selva of the material at intervals of not more than one yard and in addition must be affixed to the roller, bolt of cloth or container. If the article has no margin or selva, the notice must be marked permanently on the reverse side at intervals of not more than one yard.

**Loss of Right to Protection**

Rights are lost if, before registration is issued by the administrator, the design is made known to the public with the consent of the proprietor without the design notice described above, or if the application for registration is not made within six months after the first date on which the design was first made known to the public.

**Application for Registration**

The application may be made by the author or his assignee. The application must give pertinent information including the name and address of the author, etc., and must contain an oath that the author personally created the original design. If the applicant is not the author the application must be accompanied by an assignment to the person making application. The application must be accompanied by a drawing or pictorial representation of the design.

**Issue of Registration**

If the applicant can satisfy the administrator that he has complied with the provisions of application described above, the design will be registered and a certificate of registration will be issued to the applicant and recorded in the official records of the administrator's office. The administrator will publish lists and indexes of registered designs with pictorial representations thereof and will maintain a file available for use and examination by applicants. A fee would be charged for each application, etc. but the draft bill does not contain the amount of such fees.

(Continued on Page 73)



# Wanted: More Imagination

(Continued from Page 34)

through his fingers. Compared to the soil everything else on the farm is so much excess baggage.

They say that the best fertilizer on a farm is the footsteps of the farmer. And so in the textile business, the top dog in any company should tear himself apart from his coffers and his charts and spend a lot of his time getting next to his product.

In other words, what we need is a loom with a view. Nobody these days buys textiles only to keep himself warm. People have been educated to expect glamor or "oomph" or "it" in fabric. Man, of course, needs but little here below. Stew, as well as porterhouse, will sustain life. A frayed-at-the-cuffs coat will keep out icy blasts as well as a Brooks Brothers' Chesterfield. A Lily cup, as well as a fragile bit of Coalport English bone china will hold coffee. Of their fabrics, however, consumers demand a lot. To provide the equivalent of the porterhouse, the Brooks Brothers' Chesterfield, and the Coalport china in a fabric takes what I call imagination.

I think part of our difficulty is that we don't really look at the products we make. You never see what you're right on top of. You don't see if you're too close to the picture. Gilbert Chesterton tells a story about an architect who was irritated at the inartistic design of a house which he was obliged to pass daily on his way to work. Finally he bought the house, moved in, lived in it, and it never bothered him again because he never saw it.

Every number in every fabric line should be agonizingly appraised and reappraised by the top brass—simply because this agonizing appraisal is exactly what takes place, only more so in the customer's mind, before she buys. Every fabric should pack a creative punch, should be pregnant with idea. Remember this: Never in the history of the textile business has a good new idea failed to click. Witness the two very important coating fabrics that were responsible for active profitable business in the last six or seven years—the poodle cloths, and the shiny polished blacks. And from whence did they come?

Another area of the woolen business dry as a bone creatively is the salesroom. 1957 does not seem to be the year of the salesperson. Salespeople seem to hate the customers like the devil hates holy water. Many salesmen seem to be little more than reluctant order takers who copy down a price and a color and a fabric number on an order blank and go off to join their confreres over a cup of coffee to discuss how lousy business is.

Yet the duty of the salesman is to know his customer's business so thoroughly that he can actually show his customer how to make money. In our business, if there's anyone more chronically insecure than the woolen manufacturer, it's the cutter on Seventh Avenue. A good sales effort is good for the customer as well as for the salesman. A good convincing sales talk should build and buttress the customer's confidence in himself.

The function of a salesman is to believe thoroughly in what he is selling and then to transplant that belief into the mind of his customer. You simply cannot write an order, kiss the fabric goodbye, and deposit your customer's check in the bank. If you do there won't be any order next season. Instead, the creative salesman arms himself with all the knowledge his mill's stylists and designers can give him so that he

can advise his customer on cutting, distributing and promoting the finished merchandise. Often, in creative selling, a fabric mill should assume primary responsibility for a garment through every step of its manufacture until it's on the ultimate customer's back—and even then keep an eye on it.

A case in point is Stroock's own classic coat called, "The Stroockster," which was conceived, planned and coordinated practically to the last stitch before a centimeter of goods was woven or before a cutter was selected to make the coat. Creative selling recognizes that, while fashion moves in cycles, something new must always be added to the old. Stroock could have relaxed and declared: Boy coats are coming back, so we have a boy coat. Instead, Stroock created a whole world of excitement around the Stroockster which began with the name itself and carried through every phase of production and marketing.

The wrong kind of selling, the "kiss the goods goodbye" kind of selling which eschews any responsibility beyond taking the order, is a shortcut to tragedy. It is hypocritical.

I hope I've made my point that what we need in the textile business is more creative activity if we want to save our necks. So, what do we do about it?

First, we do some long range thinking that will cost us money in the short run, but will make our fortunes in the long run.

We glamorize our designer or design staff within our organization. We point these people up to all as the creative font from which all our blessings flow.

We do not harass our designers. If we have to harass our designer in order to get our next season's line into work, we add a new designer who can be free to think in long-range terms and trends, who can create in an unruffled atmosphere of creative calm. We do not force our people to create in a pressure cooker.

## Encourage Creative Talent

We band together to help the schools to interest and train creative talent. Whether we do this by establishing individual scholarships or by subsidizing the entire creative training program in the schools, it will cost us real money but it will save our very real neck.

We drum into our salespeople that the responsibility of a mill to its customer does not end until a garment is (happily) on the back of the ultimate consumer.

We glamorize our selling staff. The advertising industry glamorized its salesmen (in advertising everybody's a salesman), and as far as I know advertising has no patent on grey flannel suits.

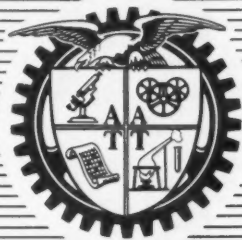
We open our eyes and honestly admit that if we don't wake up it can happen to you. In the textile business these days anything can happen to anybody—including you personally and me personally and not just the other guy. You know it's only human to think that disaster can't happen to me, myself, and I.

One summer twilight an aged couple were sitting out on the lawn in front of their house. Smoke curled from the old man's pipe and a contented smile played on the old lady's face. Finally, the husband sighed a deep sigh and said, "We might as well face it, Maria. One of us is going to have to go first." And Maria answered, "That's right, Jed. And when that happens I'm moving to California."

But don't kid yourself. Nobody is named Maria in the woolen business. ■



# PAPERS OF THE AMERICAN ASSOCIATION FOR TEXTILE TECHNOLOGY INC.®



## AATT

## How modern metallic yarns are made

By William B. Davis

**M**ETALLIC yarns have come a long way. In ancient times makers of metallic yarns actually beat gold and silver into thin ribbons, which was then worked into fabrics. In Asia Minor, linen filament was wound with animal membrane, the outside of which was covered with the thinnest of gold leaf. This was an interesting attempt to build improved properties into metallics by combining metals with other materials—a concept which in modern times revolutionized the metallic yarn industry.

In the early 1900's a gold or silver plated copper core was introduced to replace the thin ribbons of metal. But these metallic yarns had many deficiencies. They were harsh to the touch and difficult to weave. But most important they tarnished. Thus the first purchase was usually the last even in the booming 1920's. The first new idea in metallic yarns in more than 30 centuries came in 1946—yarns made by lamination.

What do we mean by lamination, which is the real secret of technological improvement in modern metallic yarns? As you may know, lamination of metallic yarns means sandwiching bright aluminum foil between two layers of a transparent plastic film. In 1946, that film could have been cellophane or acetate, but most of the time it was acetate butyrate. The laminate then went through a slitter and wound up as the finished yarn. By using a transparent adhesive for lamination, a silver yarn is the result; and a yellow gold adhesive produces a gold yarn. Other colored metallic yarns could be made by pigmenting the adhesive. But the important fact was that plastic films were used successfully as a component of metallic yarns.

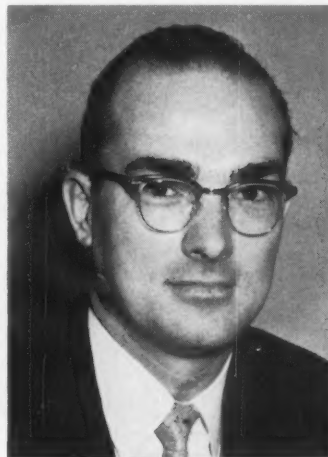
With the addition of plastic films as components, metallic yarns took on significant new advantages. First of all, they were now non-tarnishing. Moreover, they were softer than anything available before, lower in cost, and—most important—they could now be run on modern looms. This development proved successful.

The use rate for metallics from 1946 to the present has grown steadily. These facts, coupled with 30

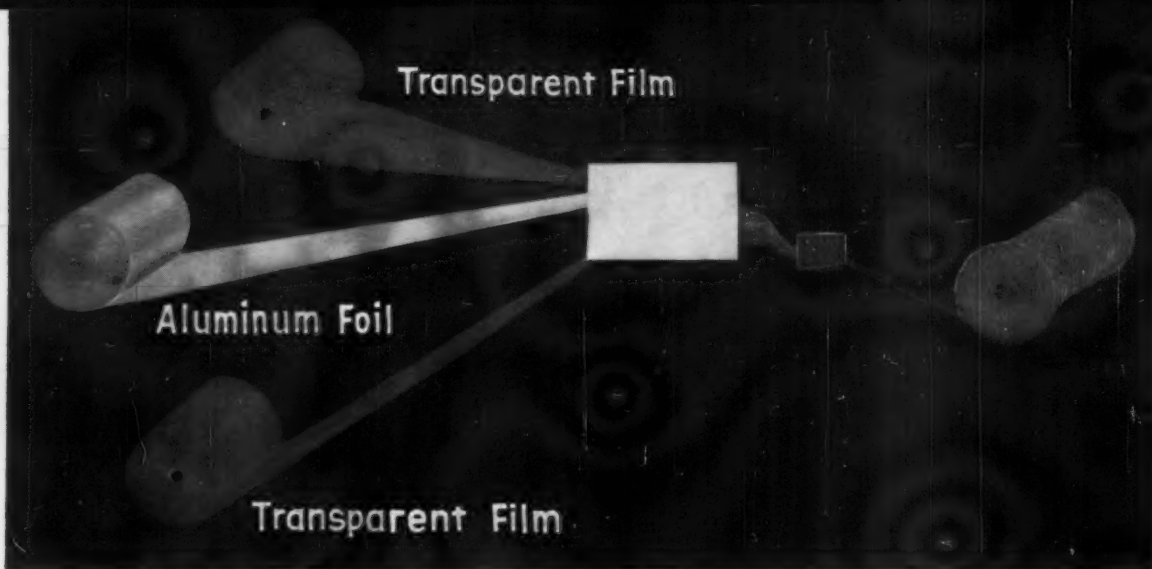
centuries of metallic yarn usage, leads us to believe that metallics are here to stay. Metallics add a new texture, a new dimension to textiles. We have recently completed an eight-month survey which strengthens that belief. Many of your executives told us that metallic yarns have transformed everyday products into "impulse" items. They report that women are buying textile products because of new styling and decorative effect—not because the old item is worn out. But metallic yarns are being used in areas that were never thought possible before. One of the reasons is the introduction of new plastics that can be used in metallics. One of these materials is "Mylar" polyester film—which came on the market about three years ago.

What is "Mylar"? It is a transparent plastic film made from polyethylene terephthalate, the polymer formed by the condensation reaction between ethylene glycol and terephthalic acid. It's not a yarn, but a tough film with a tensile strength of more than 20,000 pounds per square inch. In addition to strength, it also resists chemical attack and withstands

Mr. Davis joined the Du Pont Company in 1940 as a production trainee following graduation from Stevens Institute of Technology. He became assistant district manager of packaging sales, Chicago, in 1949. He moved to Wilmington in 1952 as assistant manager, industrial sales, where he was active in the early stages of development of metallic yarn made with "Mylar" polyester film. In September, 1956, he was appointed to his present position as manager of Du Pont film department industrial sales.



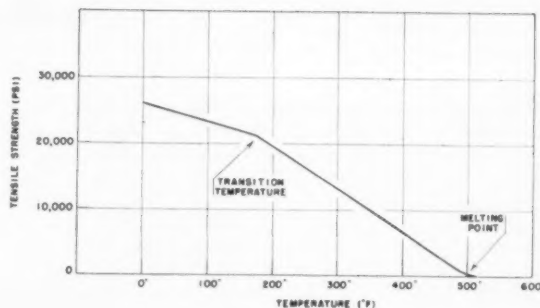
William B. Davis



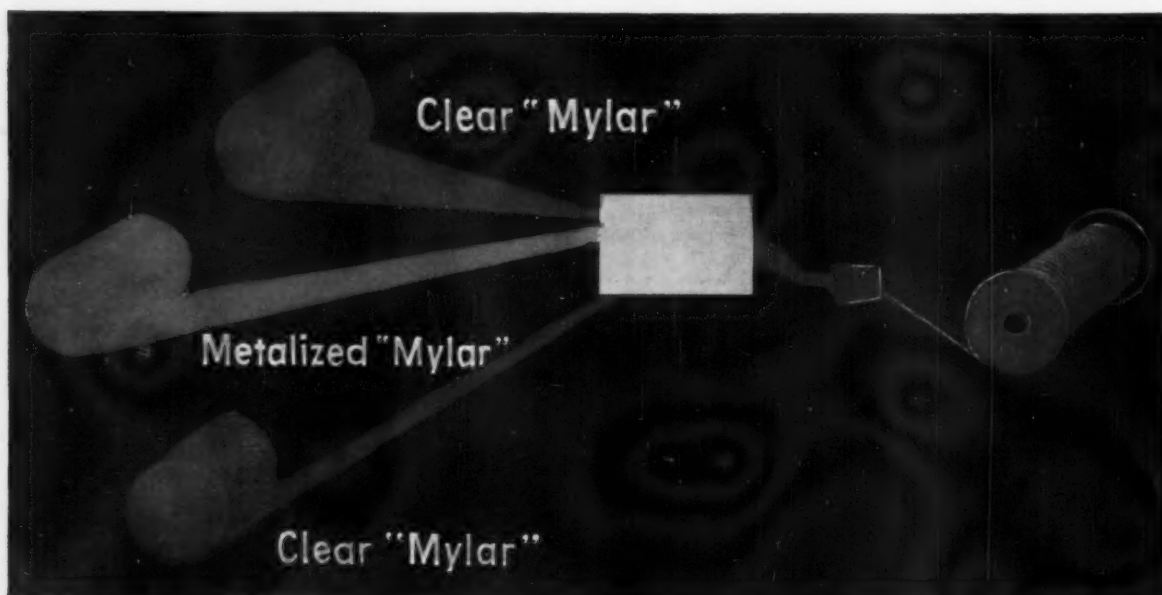
**THIS SANDWICH IS THIN**—One way to make modern metallic yarns is shown above. Bright aluminum foil is sandwiched between two layers of transparent plastic film. For the plastic film acetate butyrate or Du Pont's "Mylar" polyester film are generally used.

temperature extremes. Since it contains no plasticizer, it will not dry out or embrittle with age. Textile people might think of its chemical and temperature resistance as being comparable with Dacron polyester fiber to which it is related chemically. But it was up to metallic yarn manufacturers to utilize this film in metallic yarn.

They took advantage of the toughness of "Mylar" by making yarn that wouldn't cut on itself—yarn that would run unsupported more frequently—yarn that is softer and more supple and, through a process called metalizing, yarn that is brighter. The chemical resistance of "Mylar" permits the manufacturers to produce yarns that are machine washable, yarns that could be piece and cross dyed, that would resist bleaching and mercerizing in cottons and carbonizing in woolsens. "Mylar" is unaffected by common dry cleaning solvents such as perchlorethylene.



"Mylar" retains its properties up to 150 to 175° centigrade. Now metallic yarns are produced that can be processed at higher temperatures. They can be



**HOW "METALIZED" YARNS ARE MADE**—A recently developed process for making metallic yarns is shown in the diagram above. A half-thousandth of an inch thickness of "Mylar" is exposed to aluminum vapor under high vacuum. It is then sandwiched between two layers of clear "Mylar" and cut into strips to make the yarn.

safely dried in a home dryer and ironed either with a steam or dry iron. But there is something else that's different about "Mylar" that permitted new directions for the yarn manufacturer, and that is metalizing.

This is done by taking a half-thousandth of an inch of "Mylar" and passing it in contact with aluminum vapor under high vacuum. The resulting so-called metalized "Mylar" polyester film is highly reflective and is used to replace the center aluminum layer in the lamination process. Clear "Mylar" is used on both sides in the lamination either with clear or colored adhesives. Out of this has come a new type of yarn. Although other films can be metalized, only "Mylar" is thin enough to make a practical yarn. Let us review some of the additional advantages that are possible by using a metalized type of yarn.

The yarn, first of all, is brighter and more lustrous. You get more sparkle than is ordinarily possible when using a narrow width yarn. Where colors are involved, this bright and lustrous appeal is particularly important. Metalized-type yarns can be used on looms with electrical stop-motion devices, as the aluminum film is only several millionths of an inch thick. Because metalized "Mylar" replaces the heavier density aluminum, you get a greater yield per pound—up to three times as much. And, finally, metalized-type yarns have excellent running characteristics. They give without breaking.

But this in no way eliminates the foil-type yarn because they, too, are made with "Mylar" and are generally recommended where you want resistance to bleaching, mercerizing, and vat dyeing. Where you

need improved high temperature resistance or where you want a resistance to a wider range of wet processing, the foil type is generally recommended. What then should we remember about modern metallic yarns?

*Fact Number 1:* Metallics have come a long way in a relatively short time. Construction by lamination with plastic films created literally a new product from an old idea.

*Fact Number 2:* Metallic yarns made with transparent films have advantages that were not possible when metals were used. They are non-tarnishing, softer than available before, lower in cost, and weavable on modern looms.

*Fact Number 3:* Metallic yarns made with transparent films have been accepted by consumers and proven in the mills. The use rate for metallics is growing steadily.

In summing up, there are two important factors about metallic yarns. First of all, modern metallic yarns are made with transparent plastic films, and it is essential to know which plastic film is used in a yarn. Plastics make possible the use of metallics in many new areas that heretofore were impractical because of technical limitations. But the film determines to a great extent the performance that can be expected by the yarn. And, two, it should be remembered that there are two types of metallic yarns made with "Mylar" polyester film, a foil and a metalized type, which have different performance characteristics. Metallic yarn suppliers are in the best position to recommend the proper yarn for a specific purpose.

## Metallic yarns in high fashion

By F. J. Waterman

**M**Y FIRST CONTACT with metallic yarns goes back to the time (we'll leave out the exact number of years) when I was in textile school in Lyon, France. There we analyzed and wove metallics into such highly complex fabrics as chiffon jacquards, the likes of which would probably appall us today. I worked with those earlier metallic yarns before the advent of metallics made with plastic films in 1946. I can well remember the extreme care with which these yarns had to be handled. This care continued through the entire manufacturing process, from preparatory operations through weaving, dyeing and finishing.

In those days, when people asked us, "What kind of guarantee will you give us with your fabric?", our answer was simple: "This fabric is guaranteed to tarnish!" And frankly, this wasn't a bad feature because the perishability of the metallic yarn meant a high yardage turnover in, however, a rather narrow fashion market.

It is thus easy to understand why we welcomed the first non-tarnishable yarn made with acetate butyrate film. This development created somewhat of a revolution in our field of fabrics and the uses for metallic yarns rose rapidly. At that time we came to recognize the growing trademarks of metallic yarns made with

plastic films like "Lurex", "Metlon", "Lamé" and others.

However, some of our foremost fashion designers

Mr. Waterman was born in Nurnberg, Germany, and received his textile training at the Ecole Supérieure de Commerce et de Tissage in Lyons, France. He has worked during the last 22 years for G. Hirsch Sons, a company with nearly 70 years of experience in the importing and use of metallic yarn for women's wear, military braid, novelty fabrics and other uses.



F. J. Waterman



**METALLIC YARNS IN USE**—This hostess gown by Claire McCardell is cut from a fabric given a glitter of gold by Dobeckmun's Lurex metallic yarn.

continue to speak disparagingly about metallic fabrics. They were too coarse, too hard, too this, too that. We believe we are now entering into a new era with the use of Du Pont's "Mylar" film as a component in metallic yarn. Metallic yarns made with "Mylar" and aluminum can be made tougher, yet finer and more resistant to the effects of dyeing and finishing.

With such yarns, and especially when used in the very fine sizes, very subtle effects can be achieved. An example of such an effect can be seen in one of our fabrics, "Crepe Monte Carlo". We received quite a bit of publicity on this fabric from the Aluminum Co. of America in ads such as those which appeared in Time Magazine. Probably one reason for this was due to a reversal of former procedures. Here, a noted French designer, Jean Desses, selected an American fabric for a French creation.

Of course, the *very* fine effects cannot be achieved on present day high speed looms with limited box arrangements, but have to be nursed along on more complex looms at a lower rate of speed. True, simple effects can be obtained at high speeds with a very low content of metal yarn but such fabrics are not classed among the "real" metallics with which we have been mostly concerned and which are now being accepted as fashion firsts.

What are the criteria for a fashion first? What does high fashion expect of a metallic fabric or, for that matter, of any fabric? I've listed five points which we use as a check list at G. Hirsch.

1. Originality
2. Good Style
3. Good Workmanship
4. Subtlety
5. Protection

Under the first heading of *originality*, the newness of the fabric is a must in the high fashion picture. It cannot be a revamped old style, or a weak copy of

an import of some kind or other. It must be authentic and fitted for the top American designer, the American cutter of high fashion clothes, and the really fashion conscious women who want fabrics and clothes that are different. We find metallic effects to be the answer. The fabric must be placed at the highest level in fashion first so that it can spiral through the various groups of fabrics and garments.

The second point of *good style* somewhat goes hand in hand with originality, because just newness or a new approach in the creation of a fabric does not mean the fabric is suitable for a particular need of the season. The hand of the fabric should not be substantially different due to the use of metallic yarn and its weight must be comparable to non-metallic fabrics. Since these new metallic yarns have considerably more brilliance, even in very fine sizes, less yarn per yard will create equal or better effects than with older yarns. These yarns are now available in a wide variety of colors in addition to gold and silver, that permit color treatments unheard of so far.

*Good workmanship* is a sore point all along the line in textile manufacturing and, of course, all other manufacturing processes. I won't surprise anyone in this room when I say that our present day weavers are not the craftsmen we formerly knew. And new modes and processes in the manufacturing unfortunately cannot supplant a good conscientious spinner, weaver, dyer and finisher. Even when we are lucky enough to have a good weaver, this still does not mean he is able to do justice to a fine and delicate metallic yarn. We find that education here is highly necessary to make a weaver proud of producing a quality fabric with new and different effects that can only be achieved with the modern metallic yarns.

*Subtlety* is a must when incorporating new metallic yarns in discretely designed fabrics. It is the only chance of making these new creations palatable and acceptable to the top designers, who so far have not been too fond of the styles shown. Softness again is of the utmost importance, especially now with the trend being away from the stiffer fabrics we have seen for so many years.

The fifth heading is *protection*, and if this paragraph has to be started with the word "piracy", it is indeed a sad state. But let us take this bull by its proper horns. A new metallic fabric, created with originality, good style, subtlety and good workmanship, is not worth a dime to a high fashion designer if, on one hand, she or he cannot be assured that such a fabric will not be copied by competition before it has had a chance to be properly developed into a top garment line, or worse still, if the creator of this fabric immediately shows it to a number of other top designers.

Practically in the same sentence, I should mention that metallic fabrics, especially in the top fashion field, quickly lose their appeal. No, their look or effect no longer deteriorates. But because they usually are so radically different from ordinary fabrics, they are more easily recognized upon a second or third contact and are then discarded as being "old".

New metallic fabrics must be given subtle publicity, just as subtle as the fabrics themselves, and it is again paramount that those catering to the high fashion field cannot expect sales above a moderate scale. It is not wise to force such fabrics on the market; it is better to maintain the output of quality fabrics from which proper results can be reaped just as much as from quantity styles and operations.



The new yarns made with "Mylar" polyester film offer improved performance in washing and ironing. For our work, the washability features are not too important because dry cleaning and natural serviceability is generally sufficient.

The careful blending of yarns, whether they are old reliable silk, wool or cotton, or the newer man-made yarns, is essential. Our experience with spinners and twisters in the field of combining metallics with other yarns is, that they haven't done justice in producing careful combinations of yarns with subdued effects. Where the spinners are at their wits' end, the weavers have to take over. And once the fabrics have been woven, the right kind of dyeing and finishing process must be used to fit the components of the fabric construction.

To sum up, high fashion demands the very best in workmanship, creativeness and subtlety. We feel that the avenues for the use of metallics have been considerably widened through the use of these new plastic films in the manufacture of metallic yarns, but our success in being able to style and design with metallics lies in our ability of keeping sufficient interest in metallics at a high fashion level.

**MORE STYLE TO HIGH STYLE**—This young-looking party dress is made of ribbon embroidered with gold metallic yarn made by Metlon sewed on a ground fabric of net. The dress is further embellished with gold rickrack at spaced intervals.



## Metallic yarns in

## DOMESTICS

By E. Douglas Miller

**I**N MAY of 1953, Callaway Mills was giving a concentrated effort to the broadening of styling in bath towels. It was our opinion that this phase of styling in the product was long overdue. Concurrently, the metallic yarn manufacturers presented their products to us as a possible means of adding decor to our towel line. Our immediate reaction to the idea was unfavorable from two points of view. First, We didn't think we could get the yarn through our finishing and dyeing processes and second, we believed that the consumer would view metallics in this application with suspicion. Metallics in her mind probably denoted a harsh yarn and she was afraid of laundering fabrics containing metallics as well as having the perennial fear that the yarn would tarnish.

Nevertheless, we proceeded to experiment with the yarn to see whether or not it could be used successfully on our terry looms. For approximately the next year and a half, we confronted many problems. These were solved through the combined efforts of the manufacturers of metallic yarn and such people in our Elm City plant as H. T. Mahaffey, Bradley Nichols, Robert Whitley and Dorsey Skelton.

The first problem we faced was the proper way of handling a flat ribbon-like metallic yarn which was so completely different from the much softer, round cotton yarns with which we were familiar. Then we developed techniques of combining metallics with our fill yarns but could not get the fabrics through the bleach finishing that we use on terry cloth. Even if we

were successful in "sneaking" the toweling through processing, the metallics just could not take the rigorous home laundry tests to which all Callaway towels are subjected before marketing. We put all our towels through 20 washings under the AATCC Test #3 that uses shot in the wash water to increase the abrasive effect.



A native New Yorker, Mr. Miller summarizes his experience as "30 years in the rag business". He left Cannon Mills in December 1940 to assume the position of assistant sales manager for the towel department at Callaway. He was promoted to sales manager of this department in 1945.

E. Douglas Miller



**TOWELS NEED NOT BE TEDIOUS**—Metallic yarns make these bath towels more attractive and hence easier to sell.

Somewhere along the line at our mill, something would always seem to be cropping up to remove the beautiful decorative effects that we were successful in weaving into our towels. This problem was presented to the metallic yarn manufacturers. We asked them for a yarn that could be:

- a. Put through a standard chlorine bleach cycle;
- b. Be washed and scoured;
- c. Guaranteed safe in a home laundry;

and would meet the consuming public's demand for a smooth hand and a non-tarnishing decorative effect. Our requirements, coupled with requests for an improved yarn in other fields, probably helped start the work on the use of "Mylar" as a component in metallic yarn during the Fall of 1954.

But the appeal of metallics still haunted us. We continued to experiment to develop a means by which to overwrap this yarn in such a way as to afford a pleasing hand and at the same time not to overwrap to such an extent that the value of the glitter was subdued. We had to conduct dye studies so as to develop the proper colors with which to dye the wrapping yarn so that it would blend well with gold or silver and still leave them at their maximum beauty.

While these studies were going on, our styling with metallics had progressed to the point where we could get maximum styling and a good hand. These activities were just part of our long range development program that anticipated the day when metallic yarns that would pass our requirements became a commercial reality.

Finally, a yarn made with "Mylar" was released. We were ready to snap it up and put it into the first commercial line of bath towels offered to the trade in February of 1955. It was an immediate success and we rapidly followed this item with alternate styles. In January of 1956 it was offered in the volume price bracket. We now have 11 product lines that incorporate metallics. Further evidence of the success of this new development was the widespread competition from practically every towel manufacturer in the country. We believe our careful evaluation before broadening our use of these yarns has paid off. The practicality of the new metallics has been demonstrated by the fact that they have not been the cause for a single return or complaint.

We believe that metallic yarns in our business have a permanent future if for no other reason than that continued laundering does not deteriorate the beauty or decorative motif. From our experience, these new yarns add a decor that seems to be everlasting (which speaking for towels in general, seems to be too long). As we see it, when metallics are executed in good taste, they can be with us for many, many more years to come. We believe that a style appeal can be created through the use of metallic yarns that can go a long way toward trading-up a product without interfering with the utilitarian purpose for which the fabric was designed. Metallics add a touch of richness and appeal that encourages retail customers to want better styled fabrics. These can do well in the higher retail brackets by standing on their own merit. We believe that the development of the use of metallic yarns in towels was, and is, a much needed stimulant for the sale of better quality and styling, and that, if handled properly, such items will continue to be among the leading and most wanted of style items.

Our experience in metallics shows they offer all of us a way to trade-up our individual textile items because they build demand for a product at a fair rate of return. Let's use them wisely.



(left)  
**GOLD YARNS IN THE SUNLIGHT**—This curtain is given glitter by metallic yarns which do not tarnish.

(bottom)  
**UPHOLSTERED IN GOLD**—The fabric on these sofas has a horizontal stripe woven with gold metallic yarn made by Metlon Corp.



# Dyeing fabrics containing metallic yarns

By Robert J. Thomas

IN THE PAST, the dyer confronted with the task of dyeing fabrics containing metallics has been concerned with the possibilities of delamination, dulling, discoloration, and staining of these effect yarns. Within the past two years, metallic yarns made with "Mylar" polyester film have been introduced to the trade. The manufacturers of these yarns claimed outstanding advantages over the earlier metallics including their ability to withstand higher processing temperatures, their ability to resist chemical attack and their substantially lower affinity for the dyes applied to the ground fibers. Accordingly, these factors were considered in an evaluation survey of many of the metallic yarns which were commercially available in 1956.

It is concluded that the dyer must still be concerned with the four problems of delamination, dulling, discoloration and staining of the metallic effects yarns, but he does have greater operational freedom than was heretofore possible. It is true that aluminum is attacked by acids and alkalis, but in the new laminated yarns the area of such attack is limited to the two exposed edges of the metal in the yarn assembly provided that the adhesive is resistant to the particular chemical treatment. The adhesives used in bonding the aluminum to Mylar have been markedly improved and, as a consequence, many of the currently available metallic yarns, both of the foil and of the metalized types, can be subjected to many processing and dyeing operations without delaminating and without losing color. Mylar, as does the chemically similar Dacron polyester fiber, resists water, many acids, and, under appropriate processing conditions, most alkalis; it resists dye absorption and is also inherently heat stable.

The foregoing factors substantiate the manufacturers' claims that the new metallic laminates are a decided advance. Let us consider their use in fabrics constructed of different fibers.

## Cotton and Rayon Processing

In the wet processing of cotton, conditions are encountered which are most likely to affect metallic yarns adversely. Since the long exposure to caustic soda at a high temperature will cause the aluminum to become severely etched, if not completely dissolved, goods containing metallic yarns should not be kier-boiled. On the other hand, the goods can be subjected to the comparatively short treatment in the strong but cold solution of caustic soda of the mercerizing process without seriously dulling the aluminum and, in the case of the yarns based on Mylar, without danger of film saponification. The metallic yarns tested were not affected by the AATCC Colorfastness to Chlorine Bleaching Test No. IV (1). However, in peroxide bleaching the use of nonsilicate system is less likely to cause dulling and discoloration

than the highly alkaline sodium silicate system (2). The following procedure, developed by Du Pont, is recommended:

Wet out the fabric for about two minutes at 170°F. with a liquor containing

2.0 g./l. trisodium phosphate and  
3.0 g./l. Alkanol HCS surface active agent.

Wash at 140°F. Then saturate at 100°F. with a liquor containing:

10.0 g./l. sodium tripolyphosphate ( $\text{Na}_3\text{P}_3\text{O}_{10}$ )

5.0 g./l. borax

1.0 g./l. Epsom salts

1.5 g./l. Perma Kleer 80

30.0 g./l. Albene 35 hydrogen peroxide

Express to 100% pickup and steam for one hour at about 205°F. Rinse and dry.

When vat dyes were applied to cotton by the pigment pad-jig development method, e.g., for 45 to 60 minutes at 140°F. in a bath containing:

1.0-2.0 oz./gal. caustic soda and

1.0-2.0 oz./gal. Du Pont Hydrosulfite Conc.,

the long exposure to the caustic alkaline development bath caused a noticeable dulling of the aluminum in some foil yarns and delamination and severe etching of the aluminum in some metalized yarns. In the application of the naphthol component of insoluble azo dyes, delamination of some foil yarns also occurred. In the application of sulfur dyes at 180°F. from baths containing sodium carbonate and sodium sulfide, a noticeable to considerable dulling of the metallic yarns resulted.

R. J. Thomas in 1934 received the Bachelor of Textile Chemistry degree from Lowell Technological Institute. Following a period of employment as a textile chemist at the Apponaug Co., Apponaug, R. I., in 1936 he entered the graduate school of the University of Notre Dame where he majored in organic chemistry. From 1939 until the present, Dr. Thomas has been employed by the Organic Chemicals Department of the Du Pont Co. Since 1950 he has been a supervisor of textile coloration research in Du Pont's technical laboratory.



Robert J. Thomas



Where yardage warrants the use of continuous processes, cotton can be dyed with vat dyes by the Du Pont pad-steam continuous dyeing process without adversely affecting the metallic yarns made with Mylar. In evaluation of this process, the fabric was vat pigment-impregnated, dried, and then padded with an aqueous solution containing 4.0 to 6.0 ounces each of sodium hydroxide and sodium hydrosulfite per gallon. It was immediately steamed at 212° to 215°F. for 20 to 30 seconds. Since oxidation and neutralization were effected immediately following the steaming, the time of exposure to the highly alkaline medium was insufficient to damage the aluminum. One might likewise expect insoluble azo and sulfur dyes to be applied continuously without damaging metallic effect yarns.

Rayon fabrics are frequently dyed at temperatures up to 212°F. with direct cotton dyes from baths containing common salt. The dyeing process itself does not adversely affect the silver yarns although some gold yarns were observed to discolor because of leaching of the yellow dye from the adhesive, but other gold yarns were unaffected. It has been recommended that the use of copper sulfate to aftertreat selected direct dyes be minimized, since it can etch aluminum (3); however, this was not observed in the newer yarns made with Mylar which were examined in the present survey. Likewise, diazotization and beta-naphthol development of direct-dyed rayon did not affect these metallics. Aftertreatment with a urea-formaldehyde resin and with Insonite dye fixing agent, which involved baking the goods for two minutes at 325°F., had no visible effect on the metallics.

#### Woolen and Worsted Fabrics

Since aluminum is dissolved by acids, one might expect the metallic yarns to be attacked in the carbonizing process. On subsection of wool fabric containing various metallic yarns to the AATCC Standard Test Method for colorfastness to sulfuric acid carbonizing (4), the metallic yarns made with Mylar lost some elongation but maintained much of their tensile strength and brightness.

Application of a level-dyeing acid dye to wool fabric containing metallic effects for one hour at 212°F., in a 40:1 volume in a bath containing 4.0% sulfuric acid on weight of fabric, resulted in no worse than a noticeable to appreciable dulling of some metallic yarns, but on many the effect was nil.

#### Nylon Fabrics

When nylon taffeta containing metallic effect yarns was dyed in the laboratory with acid dyes for 45 minutes at 212°F., using 40:1 volume in a bath containing on weight of fabric:

5.0% ammonium acetate and

2.5% acetic acid (56%),

no worse than a noticeable dulling was evident. In fact, the effect on many metallic yarns was negligible. Even when such a nylon fabric was dyed in moderately acid media for the comparatively long cycle required to apply chrome dyes, many metallic yarns were essentially unaffected, although some were dulled noticeably. This treatment involved dyeing for 30 minutes at 212°F. with 5.0% acetic acid (56%), then with 4.0% formic acid (87%) being added and dyeing continued for 30 minutes at 212°F. and, after rinsing, the dyeing treated for one hour at 212°F. in a bath containing:

2.0% sodium bichromate and

5.0% formic acid (87%).

Application of Capracyl neutral-dyeing premetallized dyes to nylon did not affect the metallics.

#### Orlon Acrylic Fiber

When fabric of Orlon Type 42 was dyed with Sevron cationic dyes at 212°F., no staining or dulling of the effect yarns made with metallized Mylar was evident, but on dyeing the Orlon for one hour at 212°F. with older basic dyes, e.g., Du Pont Fuchsine Conc. and Du Pont Brilliant Green Crystals, a number of gold yarns were shaded to a noticeable degree. It is particularly important that acrylic fiber fabrics containing metallics be tested with the cationic dyes to be used.

#### Dyeing of Nylon, Acetate and Dacron with Disperse Dyes

Since Mylar is chemically similar to Dacron, it is to be expected that it will absorb disperse dyes. Consequently, when disperse dyes were applied to fabrics of acetate, nylon, Dacron or other synthetics containing metallic yarns as effect threads, the latter were usually stained. The degree of staining increased as the dyeing temperature and time were increased. Hence, staining would be somewhat more pronounced when fabric made of nylon is dyed at 200° to 212°F. than when one made of acetate is dyed at 180° to 200°F. When the disperse dyes were applied to Dacron from a bath containing a carrier, then the staining of the effect yarns was substantial.

The degree of staining of metallic yarns by disperse dyes also varied with the different dyes of this class.

Many of the metallic yarns were not delaminated by the Thermosol process in which disperse dyes are fixed on Dacron by treatment in air for about one minute at temperatures up to 425°F.

Fabrics made of Dacron and containing foil yarns have been heat-set at 350° to 375°F. without adversely affecting the metallics.

In conclusion, it is apparent that in the new metallic yarns the textile designer has available durable and very attractive effect yarns. These yarns are resistant to many dyeing processes and are not seriously affected by certain of the processes commonly employed to apply dyes generally recommended for the ground fiber. Yet, we must close with a word of caution; since the metallic yarns currently available to the trade are manufactured by different firms, the adhesives and laminating techniques used to prepare the yarn assemblies may vary. Consequently, the dyer would be well advised in his preliminary shade matching to note the effect of the dyes and of the proposed fabric preparation and dyeing processes on the particular effect yarns in the fabric. If necessary, dye substitution or process modification can be made, but in most instances maintenance of an acceptably bright effect of good contrast will be feasible.

#### ACKNOWLEDGMENT

The collaboration of C. F. Miller, M. C. Harmon, J. P. Neary and G. T. Hug in evaluating the metallic yarns as to their resistance to the different dyeing and processing operations discussed is gratefully acknowledged.

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## Europe

(Continued from Page 44)

**Belgian Rayon Problems**—Consumption of rayon yarn in Belgium has been rising slowly since the depression of 1952. But the industry is beset on three fronts: competition from other man-made fibers; imports, especially from Holland, and narrowing cost-price margins. Pure rayon fabrics used for linings and in garments have been taking a beating from synthetic fibers. Brussels' two leading department stores recently held "American" and "Canadian" sales drives which included a wide range of North American man-made fabrics—garments and piece goods—made of synthetic fibers.

Belgium's big Kredietbank was led to comment in one of its weekly bulletins on the plight of the nation's rayon markets. The bank concluded: "Mergers of firms in order to form units of an optimum size, or cooperation in the commercial and industrial fields, are therefore of vital importance to our rayon weaving industry." (More shades of the "common market"!)

## TDI News (Continued from Page 63)

### Assignment

A provision is included for assigning a registered design. The assignment would not be binding upon a third party who had no notice of the assignment unless the assignment was recorded in the administrator's office within three months after execution.

### Infringement

A registered design would be infringed if, during the term of protection, it is copied or reproduced on an item made for sale or use in trade. Protection is also provided against importation of copies. There is one rather ambiguous clause under the infringement section which says that it is not an infringement to make, sell or import an article embodying a design "created without access to or knowledge of protected design". Injunctions may be granted by the courts to protect against infringement and damages also may be recovered. There are penalties for false marking of registered designs and false representations in applications for registration of designs.

## Dyers to Close July 1 to 15

The uniform vacation period for dyers and printers in the metropolitan New York—New Jersey area has been set for July 1 to July 15. Actually the vacation period will begin at the close of business on Friday, June 28, with plants opening again on Monday morning, July 15.

## Outlook (Continued from Page 30)

These processes are by no means new. They are reaching a point where better control of finished yarn properties is now possible. In this way, special yarns for special end uses can be developed, and merchandising efforts can be focused on individual markets.

Costs in many cases are still quite high, and there are substantial development expenditures to be written off. Total poundage of modified filament yarns is also still small. If expectations for substantial growth in the next year or two are realized, however, a better evaluation of ultimate potentials will then be possible.



**FINER NETS MEAN MORE FISH**—Fish nets of "Terylene" polyester fiber used by these East African lake fishermen are finer than previously used cotton nets. Their greater fineness makes them less visible in clear lake waters and hence they catch more fish. And their greater resistance to rotting makes them last longer than cotton.

## New High-Strength Rayon Staple Fiber

A new high strength rayon staple fiber, called "Avisco XL", was introduced last month at the annual stockholders' meeting of American Viscose Corp. The new staple is said to be 70% stronger when wet and 40% stronger when dry than conventional rayons.

Dr. Herschel H. Cudd, the company's vice president in charge of research and development, said that Avisco XL in comparable constructions and weaves, results in fabrics with 25% more breaking strength and 33% more tear strength than cotton. The new fiber has been spun into yarns as fine as 60/1 with 1.5 denier, 1 9/16" staple.

It is expected that the new rayon staple will have special advantages in industrial ducks, tarps and similar fabrics as well as in blends with acrylic and polyester fibers to yield lighter-weight, minimum care fabrics with draping characteristics of regular rayon.

## Chemstrand Expansion

Production capacity of Chemstrand Corp.'s Acrilan acrylic fiber plant at Decatur, Ala., will be expanded by 50 percent. Edward A. O'Neal, Jr., Chemstrand president, said the plant, now operating at its full production rate of 30 million pounds annually, will be enlarged to 45 million pounds annually. Increasing demand for Acrilan made the expansion necessary, Mr. O'Neal said. Chemstrand's nylon plant at Pensacola, Fla., also is undergoing expansion, from the current capacity of 59 million pounds annually to 114 million pounds annually during 1958.

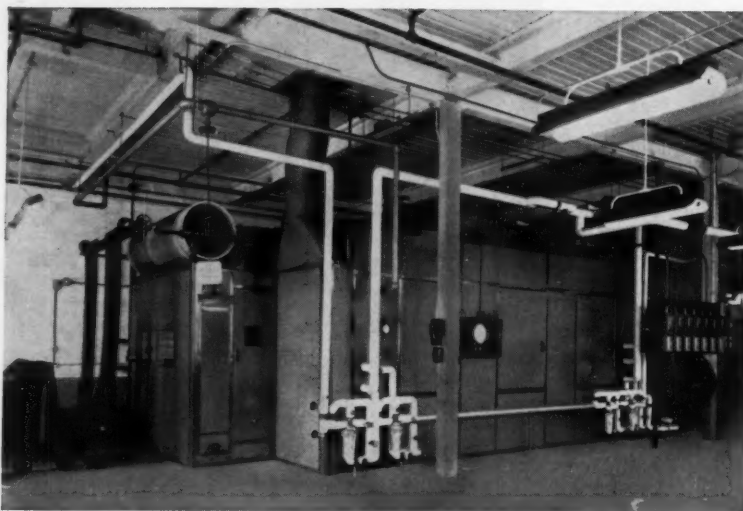
## NFT Warp Knit Officers

Roy Reubel of J. P. Stevens & Co., Inc., was re-elected chairman of the National Federation of Textiles' Warp Knit Fabric Manufacturers Group at the group's annual meeting. Randolph A. Walker of Woodside Mills was re-elected vice chairman.

Named to the executive committee were Gilbert Cohn, Lee Dyeing Co., of Johnstown, Inc.; Nathaly Robbins, Webco Mills, Inc.; Seymour Sahlein, Frank Ix & Sons, Inc.; William D. Scott, Jr., Blue Ridge Textile Co., Inc., and Philip Wick, Philip Wick Co., Inc. Arthur E. Menke of Glen Raven Silk Mills, Inc., was elected to serve as the group's representative on the Federation's board of directors.

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## Textile News Briefs

### Nylon Tire Fabric

United States Rubber Co. plans to spend \$1,000,000 to expand production facilities for nylon tire fabric at its Scottsville, Va., plant. The expansion, according to William E. Clark, vice president of the company's textile division, is part of a program to make available to customers the latest in technological improvements for building better tires. The growing use of nylon fabric by the tire industry makes the expansion necessary.

### American Enka Diversifies

A program to broaden the base of operations of American Enka Corp. beyond the production of rayon and nylon yarn and staple fiber has been announced by J. E. Bassill, president. Carl R. Dolmetsch has been appointed manager of business development. He will investigate and promote commercial possibilities for the company in fields and products in which it is not presently engaged.

### Crepe Revival Expected

Crepe fabrics, in a wide range of constructions, will be popular this fall, according to P. H. Conze of Celanese Corp. They are varied in weave, texture and hand and will include those with a worsted feel, satiny surfaces, supple twills, woolen effects, and sheers.

### Reeves Buys S. C. Plant

Reeves Brothers, Inc., has purchased the Fairmont Mills plant in Spartanburg County, S. C., and is transferring the operations of the Warrior Duck Mill from the present location in Fairforest to the new plant. The Warrior Duck Mill is a division of Reeves Plastics, Inc., a wholly-owned subsidiary of Reeves Brothers, and extrudes and processes the Reeveon polyethylene filaments. The transfer was necessary to acquire additional production space for the division's new polyolefine and other thermoplastic filaments and yarns.

### Sun Chemical to Move

Plans to move all administrative and executive activities of Sun Chemical Corp. from Long Island City to the new 34-story building being erected at 750 Third Ave., New York City, has been announced by Norman E. Alexander, president. Plans call for occupancy of the new headquarters early next year. Sun Chemical will use about 42,000 square feet in the new building.



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DIVISION

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### NORTHERN

DIVISION

Danielson, Conn.

#### Metlon to Exhibit Yarns

Metlon's metallic yarns will be shown at the 26th Industrial Fair in Poznan, Poland, June 9-23, as part of the American Exhibit. The exhibit will feature the firm's Metlon-with-Mylar, reported to be a nontarnishing, completely washable metallic yarn.

#### Foster Builds Dike

Foster Machine Co. has completed construction of a substantial dike at its Westfield plant to ward off a repetition of flood damage that interrupted production in 1956. The plant also has been equipped with waterproof doors and the Foster management is confident that henceforth its "production schedules will be fully water-resistant."

#### To Sell Lodi Dye Equipment

United Piece Dye Works has appointed Industrial Products of America, Inc., Paterson, N. J., exclusive agent for disposal of equipment of its recently discontinued Lodi, N. J., plain dye division. The machinery is reportedly valued at over \$1,000,000, and includes late model dye becks, jigs, boil-off machines and finishing ranges.

#### Chemical Plant Enlarged

To match customer growth Mathieson Alabama Chemical Corp., a wholly-owned subsidiary of Olin Mathieson Chemical Corp., has doubled the size of its plant at McIntosh, Ala., so that it can now produce about 250 tons of chlorine and 280 tons of caustic soda daily. The chemicals are marketed by the parent company's Industrial Chemicals Division, headquartered in Baltimore, Md. The plant was built on the McIntosh salt dome to serve the needs of the rayon, paper, textile and other industries in the Deep South.

#### Avisco Integrity Program

First table cover manufacturer to be licensed under the Avisco integrity program is the Quaker Lace Co., it was announced by American Viscose Corp. Table covers are the latest category of end products to be included in the integrity plan, the quality control program for all merchandise made from Avisco fibers.

#### Carpet Training Plan

A country-wide education program for sales personnel in all segments of the floor coverings industry has been launched by Industrial Rayon Corp. Charles E. Rodgers, Jr., nylon sales manager, New York office, said the training program will include an objective analysis of all major carpet fibers, and is designed to point out why nylon is used in floor coverings.

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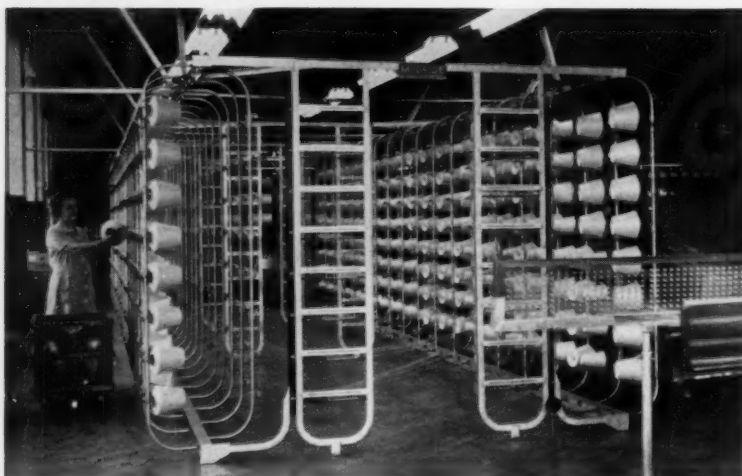
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General Offices at Belgrade & Ontario Streets, Philadelphia 34, Pennsylvania. Plants at Philadelphia and Quakertown, Pennsylvania.

#### SALES REPRESENTATIVES

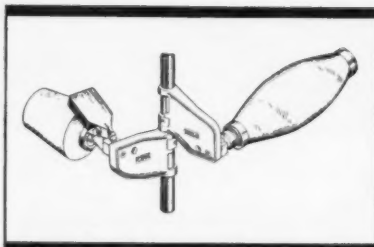
David F. Swain & Company, 105 W. Adams Street, Chicago 3, Ill.  
Shannonhouse & Wetzell, Johnston Building, Charlotte 2, N. C.

# McBRIDE CREEL CORNER

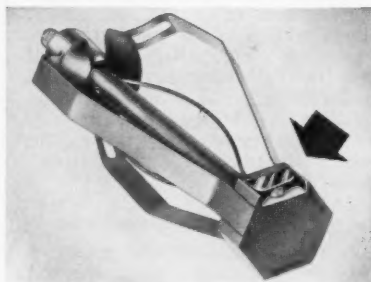


Can your warp room handle the great variety of modern packages? Consider these advantages of a McBride Creel Swing Arm Assembly.

- Rugged construction for rigid support of heaviest packages.
- Readily swings out for package change, snaps back into locked position.
- Accommodation of most packages without special adapters by Quik-Change Cone Holder or Bowed Spring Spindle; adapters available for the few exceptions.
- Perfectly smooth surfaces; no ragged or sharp edges to snag ballooning yarn.
- Yarn won't fall off behind the package; self-adjusting, polyurethane Anti-Snagging Pad firmly but gently follows back edge of package during draw off.



McBride Swing Arm Assembly



McBride Quik-Change Cone Holder in position over Bowed Spring Spindle. Note spring thumb release; snaps back on.

*We specialize in difficult warping problems. Ask us about yours.*

*CREELS for every purpose; CONE HOLDERS, STOP MOTIONS, TENSION CONTROLS, WARP BEAMS, FLANGES, CARPET INSPECTION TABLES, METAL AND WOOD ROLLS. COMPLETE ENGINEERING SERVICE IS PART OF EVERY McBRIDE INSTALLATION*

## Mc BRIDE

COTTMAN AVE. & WISSINOMING ST.  
PHILADELPHIA 35, PENNSYLVANIA

IN THE MIDWEST:  
ALBERT R. BREEN  
80 E. JACKSON AVENUE  
CHICAGO 4, ILLINOIS

IN CANADA:  
HUGH WILLIAMS & CO.  
47 COLBORNE STREET  
TORONTO 1, ONTARIO

## New Dodgeville Plant

Opening in June of Dodgeville Finishing Co.'s new plant at Blacksburg, S. C., will increase processing by the firm by 500,000 yards initially. Containing approximately 60,000 square feet of production space plus about 25,000 square feet of warehousing, the plant will handle finishing of nylon, rayon and Dacron marquisettes for the curtain trade under the firm's Endurable label. The capacity of the plant will ultimately reach 1,000,000 yards per week. The Endurable finish is said to impart new strength and added beauty to curtains, minimizing shrinkage, increasing resistance to wrinkles, and easing laundering.

## Old Slater Mill Museum

The Old Slater Mill Museum, Pawtucket, R. I., reopened for the Summer season on April 16. The museum, located in the original building in which Samuel Slater established the first successful cotton manufacturing plant and which is recognized as the "Cradle of the Textile Industry" in the United States, is devoted to the history of the industry.

## Celanese Extends Lot Letter Age of Acetate

Celanese Corp. of America has extended the lot letter age identification for its acetate staple and tow from a three-month period to a 12-month period. The new simplified inventory and better processing flexibility for customer method is expected to provide both mills.

## Metallic Yarn Booklet

New fabric opportunities created by the development of metallic yarns made with Mylar polyester film are outlined in a new booklet, released by Du Pont. The booklet is the first step in a new information program designed to provide mills and other consumers of metallic yarns with facts about yarns made with Mylar. Copies of the booklet may be obtained by writing E. I. Du Pont de Nemours & Co., Film Dept., Room MT-5, Wilmington 98, Del.

## Personnel Changes

Hugh S. Jones, Jr. has been appointed to the newly created post of technical representative in Europe for Du Pont's Textile Fibers Department. He has established headquarters in Switzerland.

Dr. Robert E. Brouillard has been named assistant manager of General Aniline & Film Corp.'s pigment division and Emil A. Wich manager at the company's pigment technical department of its Dye-stuff and Chemical Division.



## Changes at Proctor and Schwartz

John H. Senior, Warren A. Dickinson, Sr., and Thomas J. Wilson, Sr. have retired from Proctor & Schwartz, Inc. Mr. Senior has held positions with the company ranging from engineering to vice president; Mr. Dickinson has spent 48 years with Proctor and Schwartz, 35 of which managed the sale of textiles and veneers; Mr. Wilson spent most of his 39 years with the company as sales engineer in Chicago.

Succeeding these men on the sales staff are C. W. Schwartz, 4th, as sales manager of textile ma-



J. H. Senior

W. A. Dickinson, Sr.

C. W. Schwartz, IV

Wm. H. Poole

chinery; William H. Poole as sales manager of the textile finishing equipment, and L. M. Christianson

as sales engineer covering the mid-west territory out of the Proctor branch office in Glenview, Ill.

E. T. McIlwan has been appointed Suntone service manager and sales representative for Sun Chemical Corp.'s Warwick Chemical Division. In the same division, Fritz H. Sarratt, Jr. has been appointed quality control chemist.



A. N. McFarlane

Alexander N. McFarlane, vice president and general sales manager of Corn Products Refining Co., has been elected president of Corn Products Sales Co., the marketing agency of the refining company. He succeeds William H. Gambel who has become senior vice president.

J. W. Jelks has been appointed director of industrial relations for all divisions of J. P. Stevens & Co., Inc. and Richard C. Horton has joined the company's fiber glass department.

Henry Printz, senior sales representative for Textile Machine Works, has returned to the U. S., after working with the company's affiliate in England for two years, to re-assume his responsibility for the Canadian territory. Charles R. Moyer has become assistant to the manager of the circular knitting section of Textile Machine Works' braiding machine division.

Charles R. Tagliabue has been elected executive vice president of United Piece Dye Works, and Clark A. Heydon, treasurer. Ramon Sieminski has been named secretary and Paul Chase, assistant secretary.

Edward Henckler has joined the Rayon Job Finishing Department of Riegel Textile Co.



## GREATER *Productive Efficiency* GIVES YOU HIGHER DYEING PROFITS

The recent trend toward larger dye batches makes GASTON COUNTY machines the natural choice since FLEXIBILITY OF DESIGN is one of the outstanding features of this

equipment. All machines are available for conventional or high temperature, high pressure dyeing (above 212°F.)

GASTON COUNTY Package Dyeing Machines are built in single and multiple kier arrangements to suit individual production requirements. Interchangeable package carriers make it possible to dye BARBER-COLEMAN CHEESES, 1 3/8" tubes or springs, 3/8" tubes, cakes, muffs or any special sizes or types of dye tubes. Write for illustrated folder.

GASTON COUNTY

DYEING MACHINE CO.

Pioneers In Automatically

STANLEY,

Gaston County Dyeing Machine Co.  
Terminal Bldg., 68 Hudson St.  
Hoboken, N. J., G. Lindner, Mgr.



Controlled Dyeing Machinery

N. C., U. S. A.

A. R. Breen  
80 E. Jackson Blvd.  
Chicago, Ill.

The Rudel Machinery Co., Ltd.  
614 St. James St. W. Montreal  
260 Fleet St. E., Toronto

# U. S. MAN-MADE FIBER PRICES

This schedule lists the prices of yarns, staple and tow as reported by the producers in May, 1957. All prices are given as subject to change without notice.

## RAYON FILAMENT YARN

### American Bemberg Current Prices

#### Regular Production Reel Spun Yarn

Den./Fil.	No Twist Skeins	Twisted* Skeins & Cones	8 1/2 Turns	High Twist Skeins & Cones	12 Turns	15 Turns	18 Turns
40/30	\$1.49	\$1.95	....	....	....	....	\$2.08
50/36	1.24	1.50	....	....	....	....	1.72
65/45	1.14	1.30	....	\$1.53	....	....	1.58
75/60**	1.04	1.18	....	1.41	\$1.46	....	1.49
100/74**	.95	1.08	....	1.33	1.38	....	1.44
125/90	.94	1.05	\$1.09	1.30	....	....	....
150/120	.93	1.02	1.12	1.27	....	....	....
300/225	....	.95	....	....	1.08	....	....

\* Twist includes twists up to 6 turns on 40 and 50 denier, and up to 5 turns on heavier deniers.  
\*\* Spun Dyed Cupracolor Black 15¢ per lb. extra.

#### "44" HH Spool Spun Yarn

Den./Fil.	No Twist Tubes	No Twist Beams	5 Turns	5 Turns Cones	12 Turns	12 Turns Beams	12 Turns Cones	15 Turns
40/30	\$1.35	\$1.35	....	....	....	....	....	....
50/36	1.00	1.00	....	....	....	....	....	....
65/45	1.05	....	....	....	....	\$1.42	....	....
75/45*	.97	....	\$1.08	\$1.08	\$1.31	1.31	\$1.39	....
100/60*	.89	....	1.03	1.03	1.23	1.23	1.31	....
125/60	.84	....	.99	.99	....	....	....	....
150/90*	.77	....	.81	.81	1.15	1.15	1.24	....
150/120	.81	....	....	.93	....	....	....	....

\* Available also in Spun Dyed Cupracolor Black at 15¢ per lb. extra.

#### Nub-Lite (Short Nubbi)

Code	Den./Fil.	2 1/2 Twist Skeins	2 1/2 Twist Cones*	5 Twist Skeins	5 Twist Cones*
1516	150/90	....	....	\$1.45	\$1.35
1517**	150/90	....	....	1.45	1.35
2000	200/120	....	....	1.06	.96
2025***	200/120	....	....	1.06	.96
3000	300/180	\$1.10	\$1.00	....	....
4000	400/224	1.10	1.00	....	....
6000	600/360	1.08	.98	....	....
8000	800/450	1.08	.98	....	....

\* Basic price for cones when dyed. Dyed Colors 30 and 35 cents above basic price. Prices based on 200 lb. dyed lots only. Prices for natural yarn on cones same as skein prices.  
\*\* Code 1517 can be run in warp or filling.  
\*\*\* Code 2025—Softer than 2000.

### CUPIONI Type B

Code	Den./Fil.	No Twist Skeins	2 1/2 Twist Cones	5 Twist Cones
9600	50/30	\$1.39	....	\$2.14
9640	70/45	1.29	\$1.64	....
9656	100/60	....	1.48	....
1540	150/90	....	1.25	....
9710	200/120	....	1.20	....
9734	275/135	....	1.10	....
9790	450/225	....	1.10	....
9813	600/372	....	1.07	....

Spun Dyed Cupracolor Black 35¢ per lb. extra. This applies to all deniers.

#### Long Type A

Code	Den./Fil.	2 1/2 Twist Cones	5 Twist Cones
9686	150/135	\$1.20	\$1.25
9738	275/135	1.05	1.10
9780	450/372	1.05	1.10
9815	600/372	1.02	1.07
9826	900/372	.95	1.00
9876	1250/372	.95	1.00
9925	2500/744	.95	1.00

#### Modified Type C

Code	Den./Fil.	5 Twist Cones
9662	100/60	\$1.43
9688	150/120	1.25

Terms: Net 30 days, F. O. B. shipping point. Minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight allowed to Memphis, Tennessee. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F. O. B. delivery point.

### American Enka Corp.

Current Prices

Effective December 4, 1956

Standard Quality Yarns

#### Standard Quality Rayon Yarns

##### A. Natural

Den./Fil.	Luster	Turns	Weaving Cones	Beams	Long	Short	Cakes	Knitting Cones
50/18	E	5 S	....	....	....	....	....	1.56
75/10	B	3 S&Z	....	....	....	....	1.08	1.22
75/18	E	4 S	....	....	....	....	1.08	1.17
75/30	B	2.5, 4S&Z	1.17	1.17	....	....	1.08	1.17
75/30	B	8 S	1.22	....	....	1.37	....	1.22
75/45	P, E	2.5 S	....	....	....	....	....	....
75/60	B, P	4.5S&Z	1.17	1.17	1.23	1.37	1.08	1.17
100/14	B, P	3, 4 Z	1.22	....	....	....	1.10	1.22
100/40	B, E	12 S	....	....	....	....	1.12	.96
100/40	B, P, E	4.5 S&Z	....	....	....	....	....	1.27
100/40	B	6 S	1.10	....	....	....	.96	1.04
100/40, 60	B, P	2.5, 4S&Z	1.04	1.04	1.08	1.12	.96	1.04
100/60	E	2.5 S	1.06	1.06	....	....	.98	....
125/40	E	3 Z	....	....	....	....	.96	....
150/40	B, P, E	2.1, 3S&Z	.91	.91	.94	.99	.86	.90
150/40	B, E	5 S&Z	.91	....	.94	.99	.86	....
150/40	B, E	8 S&Z	.97	....	1.00	1.05	....	....
150/40	B, P	10 S&Z	1.03	1.03	....	....	.87	....
150/90	B, E	2.1 S&Z	.92	.92	....	....	.87	.82
200/40	P	3 Z	....	....	....	....	.95	....
250/60	P, E	2.4 Z	....	....	....	....	.75	....
300/50	B, E	3 S	.73	.73	....	....	.76	.71
300/60, 120	B, P, E	2.1 S&Z	.73	.73	....	....	.76	.71
300/60	B	3.5 S	.73	.73	....	....	.76	.71
300/60	B	4.3 S	.76	.76	....	....	.74	....
300/60	B	7 S	.83	....	....	....	....	....
300/40, 120 H.T.	B	2.5, 3, 4S	.75	.75	....	....	.72	.68
450/80	B	3 S	.70	.70	....	....	.67	.66
600/80, 120	B, E	3 S	.69	.69	....	....	.68	.66
900/120	B	3.4 S	.68	....	....	....	.68	.68
900/120 H.T.	B	3.6 S	.70	....	....	....	.68	.68

#### "Jet spun" Colored Yarns

Den./Fil.	Tenacity	Turns	Weaving Cones	Beams*	Cakes	Colors
100/40	Regular	2.5S	1.39	1.39	....	All
150/40	Regular	2.1S	1.26	1.26	....	All
200/40	Regular	8.3S	1.27	....	....	All
450/80	Regular	3.0S	1.05	....	....	All
300/40	High	3.4S	1.10	1.10	....	All
600/80	High	3.4S	1.08	....	....	All
900/120	High	3.4S	1.05	1.05	....	All

Registered trademark of American Enka solution dyed rayon yarn.  
\* Single color.

### American Viscose Corp.

Effective December 14, 1956

#### Graded Yarns

Denier	Filament	Type	Short Skeins	Long Skeins	All Cones Beams	Cakes
50	20	Bright & Dull	....	\$1.59	\$1.56	\$1.45
60	10	Bright	....	....	1.41	1.30
75	10-30	Bright	1.24	1.20	1.17	1.08
75	30	Dull	....	....	1.17	1.08
100	14-40	Bright	1.12	1.07	1.04	.96
100	60	Dull	....	....	1.06	.98
150	24-40-60	Bright & Semi-Dull	.99	.94	.91	.86
150	40	Dull	....	....	.91	.86
150	90	Dull	....	....	.92	.87
200	10-44	Bright	.90	.85	.82	.78
250	60	Semi-Dull & Dull	.82	.78	.75	.73
300	44	Bright & Dull	.79	.76	.73	.71
300	234	Dull	....	....	.75	.73
450	100	Bright	....	.72	.70	.68
600	100	Bright	....	.71	.69	.67
900	60-100-150	Bright	....	.70	.68	.66
1200	75	Bright	....	.67	.65	.63
2700	150	Bright	....	.70	.68	....

#### Extra Turns Per Inch

	Bright 6-Turns	\$1.36	\$1.32	\$1.29	\$
75	30	....	....	....	....
100	40	1.24	1.19	1.16	1.08
150	40	1.09	1.04	1.01	.96
300	15	....	....	.78	....
300	45	....	.86	.83	.81
600	30	....	.76	.74	.72

#### Rayflex Yarns

	Rayflex	\$	\$	\$	\$
150	60	....	....	.94	.89
300	120	....	....	.75	.73
450	120	....	....	.72	.70
600	234	....	....	.71	.69
900	350	....	.72	.70	.68

**Wilbur H. Brumfield** has been appointed assistant to the president of Allied Chemical & Dye Corp.'s Solvay Process Division.



D. E. Henderson

**David E. Henderson** has been elected a vice president of Roberts Co.

**D. M. Nielsen** has been appointed assistant district manager of the N. Y. district sales office for Carbide and Carbon Chemicals Co., and **R. H. Rehm** has been appointed assistant district manager of the Newark district sales office.

**Sandra Norris** has joined Chemstrand Corp. as assistant fashion co-ordinator in the fashion section of the advertising, merchandising and promotion department. In the merchandising section of the same department, **James Gould, Jr.** has become home furnishings merchandising co-ordinator.

**Alexander W. Westreich** has been named president of Pellon Corp; **Rolf A. Merton**, executive vice president; **William M. Kloth** and **Werner Jacob**, vice presidents.

**A. Lyndon Foscue, Birny Mason, Jr., and Edwin B. Suydam** were elected vice presidents and appointed members of the appropriations committee of Union Carbide and Carbon Corp.

**Jack Harlow** has been appointed general manager of Volveray Corp.'s Fall River mills. Mr. Harlow succeeds **John W. Rigganbach**.

**Peter C. Everett** has been appointed to represent Whitinsville Spinning Ring Co. in Ga., Ala., and Tenn.



E. M. Kennedy

**Eugene M. Kennedy** has been named export sales manager for Whitin Machine Works.

**Matthew J. Babey** has been appointed sales and technical service representative in the New York City Greater Metropolitan area for Atlas Electric Devices Co. Mr. Babey has replaced **Fred Schlayer** who retired from this position.

**Norbert Weinberg** has become assistant to the manager of textile research and development of Food Machinery and Chemical Corp.'s Becco Chemical Division.

## Deaths

**P. Dayton Switzer**, a sales executive for American Cyanamid Co., has died at the age of 59. He had been associated with the company's Dyestuffs Department since 1933.

**Harry A. Severson**, chairman of the board of directors of Barber-Colman Co. died recently after a short illness. He started work with the company in 1901.

**Walter E. Hadley**, charter member and first national secretary of the American Association of Textile Chemists and Colorists, died at the age of 76. Mr. Hadley had retired in 1944.

**William Fraser**, a director and former treasurer of J. P. Stevens & Co. died after a long illness at the age of 77.

**for superior  
finishes...  
complete removal  
of size is a  
first essential**

# RAPIDASE<sup>®</sup>

UNEQUALLED FOR DE-SIZING AT HIGHEST TEMPERATURES AND AT HIGHEST SPEEDS

In concentrations to meet every requirement  
... in liquid or powder form ... RAPIDASE is  
universally used for cottons and all fabrics  
containing man-made fibres.

**WALLERSTEIN COMPANY, INC., 180 Madison Avenue, New York 16, N. Y.**

## Thick and Thin Yarns

150	40-90	Bright & Dull	\$	\$	\$1.15	\$
200	75	Bright & Dull			1.05	
300	120	Bright & Dull			.95	
450	100	Bright & Dull			.92	
490	120	Bright & Dull			.95	
900	350	Dull			1.00	
920	120	Bright & Dull			1.00	

## Colorspun Yarns

Currently producing regular and high tenacity at premiums at \$.35 per pound.

## Viscose Filament Yarns

The following material deposit charges are required:

Metal Section Beams	\$170.00 each
Wooden Section Beams	55.00 each
Wooden Section Beam Crates	30.00 each
Metal Section Beam Racks	75.00 each
Metal Tricot Spools—14" flange	30.00 each
21" flange	60.00 each
32" flange	150.00 each
Metal Tricot Spool Racks—14" flange	135.00 each
21" flange	100.00 each
32" flange	75.00 each
Wooden Tricot Spool Crates	20.00 each
Cloth Cake Covers	.05 each

Same to be credited upon return in good condition—freight collect. Terms: Net 30 days.

## Celanese Corp. of America

Current Prices

Effective December 14, 1956

Den. Fil. Twist	Beams	Cones	Cakes	Non Shrunken Tubes
#19 and #14 Production				
75/30/3 Bright		\$1.11	\$1.03	
100/40/2Z	.96			
100/40/3	.98	.96	.91	
100/40/5		1.02	.97	
100/60/3		.97	.92	
125/40/2Z	.94	.92		
150/40/3	.89	.85	.80	
150/40/2Z	.87			
150/40/5		.91	.86	
150/40/8		.97	.92	
150/40/0	NS	.71		
300/50/3		.72	.69	
300/50/0	NS	.63		
#20 Production				
150/40/3 Bright	.87	.83	.78	
150/40/0	NS	.71		
150/40/2Z	.87			
300/50/3		.72	.69	
300/50/0	NS	.63		
#20 Production				
100/40/3 Dull		.96	.91	
100/60/0		1.00		
100/60/5		1.04	.97	
150/40/3		.87	.78	\$1.77
150/40/0	NS	.71		
150/90/3		.90	.85	
250/60/0	NS	.67		
250/60/3		.75		.70
#32 Thick & Thin Rayon				
150/60/3 Bright		1.15		
450/120/3		.89		

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

## E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Effective with orders December 7, 1956

## Bright and Dull

Den.	Fil.	Turns/Inch Up to	(A) Cones, Beams, Tubes	Skeins	Cakes
40	20	3	Textile "Cordura"	\$1.90	\$1.90
50	20	3	Textile "Cordura"	1.63	1.63
50	20	3	Textile "Cordura"	1.65	1.65
50	35	3	Textile "Cordura"	1.70	1.70
75	10	3		1.17	1.20
75	15	3		1.17	1.20
75	30	3		1.17	1.20
100	15	3		1.04	1.07
100	40	3	Bright	1.04	1.07
100	60	3	Dull	1.06	1.09
125	50	3		.96	.98
150	40	3		.91	.92
150	60	3		.91	.92
150	60	3	Textile "Cordura"	.92	.93
150	60	3	Dull	.92	.93
150	100	3	Dull	.92	.93
200	35	3		.82	.84
200	20	3		.82	
300	50	3.5		.73	.76
300	120	3	Textile "Cordura"	.74	.77
450	72	3		.70	.72
600	96	3		.69	.71
600	240	3	Textile "Cordura"	.70	.72
900	50	3		.68	.70
900	144	3		.68	.70
1185	480	3	Textile "Cordura"	.68	.68
1800	100	3		.68	
2700	150	3		.68	.70
5400	300	3		.75	

## Thick and Thin

100	40	3	#7	1.38		1.38
150	90	3	#7	1.15	1.16	1.15
90	90	3	#19	1.15	1.16	1.15
200	80	3	#7	1.05	1.06	1.05
450	100	3	#7	.89	.90	.89
1100	240	3	#50	1.32		1.32
2200	480	3	#50	1.14		1.14

## Fiber E

300	50	2.5		.88	
900	50	2.5		.83	
900	90	2.5		.83	
2700	150	2.5		.88	
2700	270	2.5		.88	
5400	540	2.5		.88	

(A) 2¢/lb. additional for cones less than 3# and tubes less than 2#.

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

\* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

## Industrial Rayon Corp.

Effective December 21, 1956

Denier	Filament	Turns per In.	Type	2.5 Lb Cones	4.4 Lb Cones	Beams	2.2 Lb Tubes	4.4 Lb Tubes
100	40	2.5 "S"	Bright	1.04		1.04		
150	40	2.5 "S"	Bright	.91		.91		
150	40	2.5 "S"	Luster #4	.91		.91		
150	40	2.5 "S"	Bright inter-mediate strength	.92				
200	20	2.5 "S"	Bright	.82				
200	40	2.5 "S"	Bright	.82				
300	44	2.5 "S"	Bright	.73		.73		
300	80	2.5 "S"	Bright	.73		.73		
300	80	2.5 "S"	Luster #4	.73		.73		
300	80	2.5 "S"	Bright extra strong	.75		.75		
450	90	2.0 "S"	Bright	.70		.70		
600	90	1.5 "S"	Bright	.69		.69	.69	.69
900	50	2.0 "S"	Bright	.68		.68	.68	.68
900	150	1.5 "S"	Bright	.68		.68	.68	.68

Luster #4 is semi-dull.

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points east of the Mississippi River. PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

## North American Rayon Corp.

Current Prices

First Quality Yarns	Den./Fil	Twist	Knitting* Cones	No Twist Knitting Cones	Beams* and Tubes* and Weaving Cones	Untreated Cakes
	75/30	3.5			\$1.17	\$1.08
	75/30	7			1.30	
	75/30	15			1.37	
Normal Strength Yarns	75/30	20			1.40	
NARCO	100/40/60 Brl.	3.5			1.04	.96
	100/40/60	12			1.22	
	125/52/60	3			.96	.90
	125/52	10			1.13	
	150/42/60/75	3	\$1.90		.91	.86
	150/42	0		\$1.71		
	300/75	3	.73		.73	
	300/75	0		.63		
	600/98	3	.69		.69	
	900/46	2.5	.68		.68	
	1800/92	2.5	.68		.68	
Semi-High Strength Yarns	300/75	3			.74	
Hi-NARCO						

\* Oiled Cones \$.01 Per Pound extra for Graded Yarns only.

\*\* 1 lb. tubes \$.02 Per Pound extra for Graded Yarns only.

Terms: Net 30 days, F.O.B. shipping point, minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight to Memphis, Tennessee allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point.

Prices subject to change without notice.

## RAYON HIGH TENACITY YARN and FABRIC

American Enka Corp.

Effective November 1, 1956

Tempra (High Tenacity)

Denier	Elongation	Beams & Cones
1100/480	Low	.59
1230/480	High	.59
1650/720	Low	.55
1820/720	High	.55
2200/960	High & Low	.55
1650/720	Low	.58
1900/720	High	.58
2200/960	Low	.57

\* Beams Only.

Terms: Net 30 days, f.o.b. Enka, North Carolina, or Lowland Tennessee; minimum freight allowed to first destination east of the Mississippi River.



# THREAD CLEANING



Type "F", illustrated, is only one of eight models in the D.F.D. family. Circulars of other types will be sent on request.

This "F" Type Cleaner has recently proved to be the most versatile of the eight different models of D.F.D. Cleaners, owing to its adaptability to the latest models of textile machines. For further information, ask for our brochure on Type "F", The Versatile Cleaner.

The unique D.F.D. system of reversible blades provides four sizes of openings with two blades, ten sizes with three blades and eighteen sizes with four blades. Cleaner designed to create oscillating motion of threads; prevents early cutting of hardened tool steel blades.

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1357-97 Monsey Ave.

Scranton 2, Pa.

## NO YARN TRAPPING WITH BRAZED ALUMINUM TWO POUND TAKE-UP BOBBIN



New aluminum take-up bobbin with barrel and heads brazed together into a single unit prevents yarn trapping. Exceptional strength at price no higher than ordinary bobbins.

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ALLENTOWN BOBBIN WORKS, INC.

ALLENTOWN

PENNSYLVANIA

JUNE, 1957



## NEW BOBBIN MANUAL

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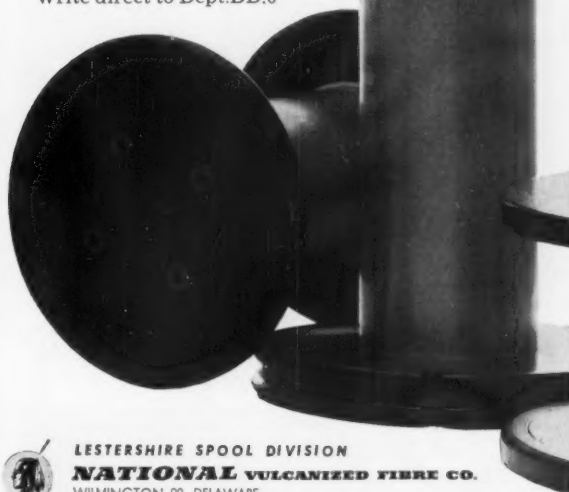
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LESTERSHIRE SPOOL DIVISION

**NATIONAL VULCANIZED FIBRE CO.**

WILMINGTON 99, DELAWARE

In Canada: NATIONAL FIBRE COMPANY OF CANADA, LTD., Toronto 3, Ontario

**American Viscose Corp.**

Effective November 1, 1956

Revised November 14, 1956

Super Rayflex				
Denier	Filament	Twist	Beams	Cones
1100	490	0	\$.63	\$.63
1100	490	4.1Z	.63	
1650	980	0	.58	.58
1650	980	4.1Z	.58	
2200	980	0	.57	.57

Tire Yarn				
Denier	Filament	Twist	Beams	Cones
1100	490	2.5Z	.59	
1650	980	0	.55	.55
1650	980	3.2Z-3.6Z	.55	
2200	980	0	.55	.55

High Strength				
Denier	Filament	Twist	Beams	Cones
1150	490	2.5Z	.59	.59
1230	490	3.6Z	.59	.59
1650	980	3.5Z	.55	.55
1875	980	3.6Z	.55	.55

Super Rayflex, Tire Yarn and High Strength yarns are sold "Not Guaranteed for Dyeing."

Tire Fabric				
Tire Yarn		Super Rayflex		
1100/490/2	Open	\$.69	\$.73	
2200/980/2		.635	.655	

Above prices based on 80% minimum Carcass, 15% maximum Top Ply, 5% maximum Breaker.

* Production Factor				
Denier	Open	Carcass	Top Ply	Breaker
525				\$.635
300	490			.645
115	275**			.67

\*\* Determined by dividing total ends by picks.  
\*\* Orders limited to 5% of total 1650 Fabric booked for any given period.

The following deposit charges are made on invoices:  
Beams ..... \$55.00 each  
Crates (Metal) ..... 75.00 each  
Fabric Shell Rolls ..... 3.50 each  
Same to be credited upon return in good condition—freight collect  
Terms: Net 30 days.

**Celanese Corporation of America**

Effective December 27, 1955

Supersedes September 12, 1955

Fortisan Yarn Prices				
Denier	Packages	Natural	Black	
30/2.5/40	2 lb. Cones	\$3.00 lb.	\$3.35 lb.	
60/2.5/80	4 " "	2.40 "	2.75 "	
90/2.5/120	4 " "	2.25 "	2.60 "	
120/2.5/160	4 " "	2.05 "	2.40 "	
150/2.5/180	4 " "	1.95 "	2.30 "	
270/2.5/360	4 " "	1.85 "	2.20 "	
300/2.5/360	4 " "	1.85 "	2.20 "	

60/2.5/80 Olive Green—Spun Dyed—OG106 4 lb. Cones 3.50 lb.  
Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U. S. A. east of the Mississippi River.

Prices subject to change without notice.  
All previous prices withdrawn.  
Note: Prices on unlisted items can be obtained upon request.

Fortisan-36 Rayon Yarn Bright					
Denier and Filament	Twist	4# cones	8# cones	Tubes	Beams
270/280	0.8Z	\$2.30			
300/280	0.8Z	\$2.05			
400/400	0.8Z	\$1.75			\$1.70
400/400	0			\$1.75	
800/800	0.8Z	\$1.25	\$1.25		\$1.20
900/800	0.8Z				
1600/1600	0.8Z	\$1.15	\$1.15		\$1.10
1600/1600	0			\$1.15	

Terms: Net 30 days. Shipments prepaid to any destination in U. S. A. East of the Mississippi River. Shipments West of the Mississippi will be made on a collect freight basis and allowance will be made for the lowest transportation cost to the point of river crossing.

Prices subject to change without notice.  
All previous prices withdrawn.  
Note: Prices on unlisted items can be obtained upon request.

**E. I. du Pont de Nemours & Co.**

Textile Fibers Dept.

Current Prices

Effective with shipments December 7, 1956

"Super Cordura" (all packages)				
Denier	Filament	Twist	Beams	Cones
1100	480	2		\$.63
1250	480	2		.63
1650	720	2		.58
1900	720	2		.58
2200	960	2		.57
2450	960	2		.57

Terms: Net 30 days.  
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of the Mississippi River.

\* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

**Industrial Rayon Corp.**

Effective November 1, 1956

**Unbleached Bright High Tenacity Yarns**

SINGLE END BEAMS AND CONES:						
Den.	Fil.	Turns	4.4 Lb. Cones	Beams	2.2 Lb. Tubes	4.4 Lb. Tubes
1100	480	1.5 "Z"	.59	.59	.59	.59
1650	720	1.5 "Z"	.55	.55	.55	.55
2200	1000	1.5 "Z"	.54	.54	.54	.54
3300	1440	1.5 "Z"	.54	.54	.54	.54
4400	2000	1.5 "Z"	.54	.54	.54	.54

"Above Prices apply to Type 100. Type 200 Tyron Prices are 3¢ more."

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges allowed at lowest published rate to all points east of the Mississippi River.

Prices are subject to change without notice.

**North American Rayon Corp.**

High-Strength Yarns—SUPER-NARCO				
Denier	Filament	Twist	Cones	Beams
1650	720	3Z		\$.55
1850	720	3Z		

Super High Strength Yarns—  
1650 720 1.5Z .58 .58  
Terms: Net 30 days, f.o.b. shipping point. Minimum freight allowed to consignee's nearest freight station East of the Mississippi River. To points West of the Mississippi River minimum freight to Memphis, Tenn. allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates if sold f.o.b. delivery point.

**ACETATE FILAMENT YARN****American Viscose Corp.**

Current Prices

Effective December 21, 1956

Bright and Dull * Intermediate Twist					
Denier & Filaments	4-6 Lb. Tubes	Twister Tubes	Warps	Spinning Cones	Twist Warps
55/14	\$1.04	\$1.02	\$1.05	\$.98	\$.99
75/20	1.00	.98	1.01	.94	.95
100/28	.95	.93	.96	.89	.90
120/32	.86	.84	.87	.80	.81
150/41	.77	.76	.78	.72	.73
200/54	.73	.72	.74	.69	.70
300/80	.69	.68	.70	.65	.66

\* Standard Twist 2¢ additional.

Terms: net 30 days.

**Celanese Corp. of America**

Current Prices

Effective December 20, 1956

Bright and Dull						
Intermediate Twist			Spinning Twist			
Denier and Filaments	4 & 6-Lb. Cones	Beams	4-TM Tubes	4-Pound Cheeses	Cones	O Twist Tubes
45/13	\$1.17	\$1.18			\$1.12	
55/15	1.04	1.05			.98	.925
75/20	1.00	1.01	.98		.94	.84
75/30	1.02	1.03	1.00			.89
100/26-40	.95	.96	.93		.89	.81
120/40	.86	.87	.85		.80	
150/40	.77	.78	.77	.77	.72	.69
200/52	.73	.74	.73		.69	.70
300/80	.69	.70	.69		.65	.63
450/120	.67	.68	.67		.63	.64
600/160	.65	.66	.65			.61
900/80-240	.63	.64	.63			
150 Denier 12-TM Tubes			.76			
55/0/15 Dull Tricot Beams			.985			
2-Pound Cheeses				.01 Less Than 4-Pound Cheeses		
2-BU and 4-BU Tubes				Same Price as 4 and 6-Lb. Cones		
2-Lb. Twist Tubes				.01 Less Than 4 & 6-Lb. Twist Tubes on 120, 200 and 300 Denier Intermediate Twist		

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.  
All previous prices withdrawn.  
Note: Prices on unlisted items can be obtained upon request.

Celaprem Filament Yarn Prices					
Intermediate Twist			Spinning Twist		
Denier and Filaments	4 & 6-Lb. Cones	Beams	Cones	Beams	
55/15	\$1.37	\$1.38	\$1.31	\$1.32	
75/20	1.34	1.35	1.28	1.29	
100/26	1.28	1.29	1.22	1.23	
120/40	1.19	1.20	1.13	1.14	
150/40	1.11	1.12	1.06	1.07	
200/52	1.05	1.06	1.01	1.02	
300/80	1.01	1.02	.97	.98	
450/120	.99	1.00	.95	.96	
600/160	.97	.98			
900/80	.94				

3 to 5 Turns on Cones or Beams — \$.02 Additional

Effective March 11, 1955



**What powder does  
for her nose, TITANOX\*  
does for her clothes...**

... eliminates the sheen—so she's slick, not shiny.

The pleasing surface of today's synthetic-fiber fabrics represents TITANOX titanium dioxide pigments in action, *permanently* delustering all synthetic fibers.

TITANOX titanium dioxides have the fine particle size and high refraction that reduce surface luster.

Our Technical Service Department can help you select the best type of  $TiO_2$  for your product. Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; Atlanta 5; Boston 6; Chicago 3; Cleveland 15; Houston 2; Los Angeles 22; Philadelphia 3; Pittsburgh 12; Portland 14, Ore.; San Francisco 7. In Canada: Canadian Titanium Pigments Limited, Montreal 2; Toronto 1; Vancouver 2.

**TITANIUM PIGMENT CORPORATION**  
subsidiary of National Lead Company

\*TITANOX is a registered trademark for the full line of titanium pigments offered by Titanium Pigment Corporation.

4901



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.... DOWN!**



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**HEANIUM®  
TEXTILE GUIDES**

Test Samples of  
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stock guides  
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Address sample  
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HEANY INDUSTRIAL  
CERAMIC CORP.  
New Haven 3, Conn.



MOH's hardness 9.5	Water absorption	O.O. impervious
Specific Gravity 3.80	Safe operating temperature	°C 1500 °F 2800

**HEANY INDUSTRIAL CERAMIC CORP.**  
NEW HAVEN 3, CONNECTICUT

Southern Representative:  
RALPH GOSSETT & CO., GREENVILLE, SO. CAROLINA  
Representative Engineer:  
ROBERT CARROLL, 408 MC IVER ST., GREENVILLE, SO. CAROLINA  
New England Representative:  
AMERICAN SUPPLY CO., CENTRAL FALLS, R. I.

## Celaperm Black Yarn Prices

Denier and Filaments	Intermediate Twist		Spinning Twist	
	4 & 6-Lb.	Beams	Cones	Beams
55/15	\$1.17	\$1.18	\$1.11	\$1.12
75/20	1.14	1.15	1.08	1.09
100/26	1.08	1.09	1.02	1.03
120/40	.99	.99	.93	.94
150/40	.91	.92	.86	.87
200/52	.85	.86	.81	.82
300/80	.81	.82	.77	.78
450/120	.79	.80	.75	.76
600/180	.77	.78	....	....
900/80	.74	....	....	....

3 to 5 Turns on Cones or Beams — \$.02 Additional  
 Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

## E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Denier & Filament	Zero Twist		Acetate Low Twist		Intermediate Twist	
	Tubes	Beams	Cones	Beams	2 & 4 Lb. % Tubes	4 & 6 Lb. Tw. Tubes
45-13	\$1.03	\$1.11	\$1.11	\$1.12	....	\$1.17
45-24	1.03	1.11	1.11	1.12	....	1.17
55-18	.925	.985	....	.99	....	1.04
55-24	.925	.985	....	.99	....	1.04
75-8	.94	....	....	....	....	1.01
75-24	.84	.94	.94	.95	....	1.00
75-50	.89	....	....	.97	....	1.02
100-11	.90	....	.98	....	....	1.04
100-24	.81	.89	.90	.93	....	.95
100-32	.81	.89	.90	.93	....	.96
100-66	.83	....	....	.95	....	.97
120-40	.77	.80	.80	.81	....	.85
120-50	.77	.80	.80	.81	....	.85
150-16	.72	....	....	.81	....	.81
150-40	.69	.72	.72	.73	....	.77
200-60	.68	....	.69	.70	....	.73
240-80	....	....	.67	....	....	.71
300-40	.63	....	....	.69	....	.69
300-80	.63	.65	.65	.66	....	.69
450-120	.63	....	.63	.64	....	.67
600-80	....	....	....	.65	....	.65
600-160	....	....	.62	.63	....	.65
900-44	.61	....	.62	.63	....	.63
900-70	.61	....	.62	.63	....	.63
900-240	....	....	.62	.63	....	.63
1800-88	....	....	.60	.61	....	.61
1800-140	....	....	.60	.61	....	.61
2700-132	....	....	.60	.61	....	.61
2700-210	....	....	.60	.61	....	.61
3000-210	....	....	....	.61	....	.61

(A) Regular Twist (2.9 thru 5 T.P.I.)—add \$.02 to Intermediate Twist Price.

(B) 1 lb. % Tubes—add \$.02 to 2 & 4 lb. % Tube Price.

(C) 2 lb. Twisted Tubes are the same as 4 & 6 lb. tubes except on 150, 200 and 300 denier Intermediate Twist where the price is \$.01 less.

## Color-Sealed

Denier & Filament	Zero Twist		Low Twist		Intermediate Twist	
	Tubes	Beams	Cones	Beams	2 Lb. 4 & 6 Lb. Tubes	Cones Beams
55-18	\$1.245	\$1.315	\$1.32	\$1.35	\$1.35	\$1.37
75-24	1.18	1.28	1.28	1.29	1.32	1.34
100-32	1.14	1.22	1.23	1.26	1.26	1.28
150-40	1.03	1.06	1.07	1.10	1.11	1.12
200-80	1.00	1.01	1.02	1.04	1.05	1.06
300-80	.95	.97	.98	1.00	1.01	1.02

(A) Regular Twist—Add \$.02 to Intermediate Twist Price.

## Black

Denier & Filament	Zero Twist		Low Twist		Intermediate Twist	
	Tubes	Beams	Cones	Beams	2 & 4 Lb. % Tubes	4 & 6 Lb. Tw. Tubes
55-18	\$1.045	\$1.115	\$1.12	\$1.15	\$1.15	\$1.17
75-24	.98	1.08	1.08	1.09	1.12	1.14
100-32	.94	1.02	1.03	1.06	1.08	1.09
150-40	.83	.86	.87	.91	.91	.92
200-60	.80	.81	.82	.85	.85	.86
300-40	.75	.77	.77	.78	.81	.81
300-80	.75	.77	.77	.78	.81	.81
450-120	....	.75	.76	.79	.79	.80
600-100	....	.73	.74	.77	.77	.78
900-44	.72	.73	.74	.74	.74	.75
900-70	.72	.73	.74	.74	.74	.75
900-240	....	.73	.74	.74	.74	.75

(A) Regular Twist (2.9 thru 5 T.P.I.)—add \$.02 to Int. Twist Price.

(B) 1 lb. % Tubes—add \$.02 to 2 & 4 lb. % Tube Price.

(C) 2 lb. Twisted Tubes are the same as 4 & 6 lb. Twisted Tubes except on 150, 200 and 300 denier Intermediate Twists where the price is \$.01 less.

## Specialty Yarns

Same Price as Regular Yarn

Same Price as Regular Yarn

Type 20	Int. Twist 4 lb. Cones	\$1.39
Type C	....	....
Type C—Thick & Thin	....	....
100-22	....	....

Denier & Filament	Natural Cones	Black Cones	Black Beams	Color-Sealed Cones
100-22 Int. Twist	\$1.36	....	....	....
200-64 Int. Twist	1.05	\$1.15	....	\$1.35
200-64 Reg. Twist	1.08	1.17	\$1.21	....
300-80 Int. Twist	1.00	....	....	....

Terms: Net 30 days. Subject to change without notice.

Domestic Freight Terms are F.O.B. shipping point, freight pre-paid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

## Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Effective December 21, 1956

## "Estron" Yarn, Bright or Dull — White

Denier & Filament	Regular Twist		Intermediate Twist		Low Twist		Zero Twist		Tricoat Beams	
	Cones	Beams	Cones	Beams	Cones	Beams	Cones	Beams	Cones	Beams
55/13	\$1.06	\$1.04	\$1.02	\$1.05	.98	.99	.92½	.99	.98½	....
75/19	1.02	1.00	.98	1.01	.94	.95	.84	.95	....	....
75/49	1.04	1.02	....	1.03	....	....	....	....	....	....
100/25	.97	.95	.93	.96	.89	.90	.81	....	....	....
120/30	.88	.86	.84	.87	.80	.81	....	....	....	....
150/38	.79	.77	....	.78	.72	.73	.69	....	....	....
200/50	.73	.73	....	.74	.69	.70	....	....	....	....
300/75	.71	.69	....	.70	.65	.66	.63	....	....	....
450/114	.69	.67	....	.68	.63	.64	....	....	....	....
600/156	.67	.65	....	.66	.62	.63	.63	....	....	....
900/230	.65	.63	....	.64	....	.61	....	....	....	....
Heavier	....	....	....	....	....	.56	....	....	....	....

Current Prices—December 19, 1956

## "Chromspun"—Standard Colors (Except Black)

Denier & Filament	Regular Twist		Intermediate Twist		Low Twist	
	Cones	Beams	Cones	Beams	Cones	Beams
55/13	\$1.39	\$1.40	\$1.37	\$1.38	\$1.31	\$1.32
75/19	1.36	1.37	1.34	1.35	1.28	1.29
100/25	1.30	1.31	1.28	1.29	1.22	1.23
150/38	....	....	1.11	1.12	1.06	1.07
300/75	....	....	1.01	1.02	.97	.98
450/114	....	....	.99	1.00	.95	.96
900/230	....	....	.94	.95	....	....

Current Prices

## "Chromspun"—Black

Denier & Filament	Regular Twist		Intermediate Twist		Low Twist & Spun Twist	
	Cones	Beams	Cones	Beams	Cones	Beams
55/13	\$1.19	\$1.17	\$1.17	\$1.18	\$1.12	\$1.12
75/19	1.16	1.14	1.14	1.15	1.09	1.09
100/25	1.10	1.09	1.09	1.09	1.03	1.03
150/38	.93	.91	.91	.92	.87	.87
200/50	.87	.85	.85	.86	.82	.82
300/75	.83	.81	.81	.82	.78	.78
450/114	.81	.79	.79	.80	.76	.76
900/230	.76	.74	.74	.75	....	....

Prices are subject to change without notice.

Prices on special items quoted on request.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in the United States east of Mississippi River. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

\* "Estron" and "Chromspun" are trade-marks of the Eastman Kodak Co.

## RAYON STAPLE and TOW

American Viscose Corp.

Current Prices

Rayon Staple		Bright and Dull \$ .29
Regular	....	....
Extra Strength	....	....
1.0 Denier	....	.34
"Viscose 32A"	....	.36
"Avisco Crimped"	....	....
1.25 Denier	....	.34
3.0 & 5.5 Deniers	....	.31
8.0 & 15.0 Deniers	....	.33
"Avisco Super L"	....	....
8.0, 15.0 & 22.0 Deniers	....	.35
Short Staple Blend	....	.32

Rayon Tow		Bright and Dull \$ .29
Grouped Continuous Filaments (200,000 Total Denier)	....	....
1.5, 3.0 & 5.5 Denier Per Filament	....	.32
8.0 Denier Per Filament	....	.34
Grouped Continuous Filaments (4400/300 & 2000/1500)	....	.65
Prices of other descriptions on request.	....	....

Terms: Net 30 days.

## Celanese Corp. of America

Current Prices

Rayon Tow		Bright and Dull \$ .29
1.5, 3, 5 D.P.F.	....	.32
8 D.P.F.	....	.34

## Courtaulds (Alabama) Inc.

Effective March 1, 1957

Rayon Staple		Bright \$ .29	Dull \$ .29
1½ and 3 denier	....	....	....
Available in 1½", 1-9/16" and 2".	....	....	....



## Non-woven Fabrics

(Continued from Page 42)

mately 1½ lb/cu.ft.) bonded Fibroceta is an excellent insulating material. It has the added advantage of not breaking down under vibration, and is therefore suitable for aircraft or vehicle use. Special fire and waterproof varieties of bonded Fibroceta have been produced.

In Germany the main channel of development has been the manufacture of random webs bonded with synthetic resins or rubber lattices. Vileda and Texovlies, bearing a close resemblance to chamois leather are two good examples of this type of fabric. They are used to replace leather in many applications.

J. H. Benecke K. G., of Hannover-Vinnhorst, manufacture a canvas substitute non-woven fabric for use as coverings for small boats, tents and motor car hoods. Imitation leather is provided by another non-woven manufactured by Karl Lissman K. G., of München-Solln, who uses a cellulosic random web fiber bond.

The majority of German companies engaged in the non-woven trade use much of the same equipment as is used for carded and combed yarn preparations. In Germany, too, new patents abound, covering various methods of bonding fibers within the layer. Among these is one taken out by Vereinigte Glanzstoff Fabriken, of Wuppertal-Elberfeld. Here fibers are air-laid and, under continuous light air pressure, conveyed on a continuous belt. Perfectly uniform density is guaranteed by a regulated suction system.

Other interesting German patents include those for manufacturing non-wovens by means of electrostatic fields. Impregnation is by diluted dispersions of polyvinyl or polyacrylonitrile binders, or solutions of superpolyamides. These are then heated and pressed into compact form, or taken through nip rollers to determine density of final fabric.

In another patent, fiber web is taken through an electrostatic field to align the web's surface fibers vertically in relation to the rest of the web. This method has been developed by Vliesna of Essen. Impregnated with resin, the material is then used as surface laminate on a type of plywood for the outside walls of railway freight cars, 50 of which are currently in use with German Federal Railways. Reports indicate this type of non-woven surface is far more weatherproof than anything previously used.

## COLOR RICHES

top colorfastness...color beauty...  
color uniformity...color versatility

**UNLIMITED** for fabric, apparel,  
home furnishings, everything

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**COLORAY**®



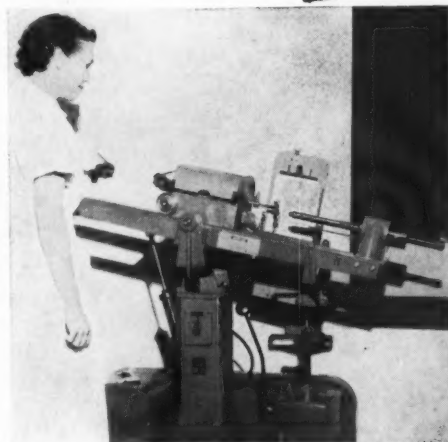
solution-dyed rayon fiber CAPTIVE COLOR  
... "CAN'T ESCAPE!"

COURTAULDS (Alabama) Inc., 600 Fifth Ave., N. Y. 20

JUNE, 1957

- and in

*Australia*



**SCOTT TESTERS\* AT**  
**COURTAULDS (AUSTRALIA) LTD.,**  
**Tomago, Australia**

Incorporated in 1949, Courtaulds (Australia) Ltd. commenced production in 1952 "after the plant was set up with the latest equipment available." Scott is proud that a firm of Courtaulds' international standing should extend their use of Scott Testers to the plant they have sponsored "down under," which specializes in rayon tyre cords and acetate yarns for knitting and weaving. The particular Model shown is the IP-4 Incline-plane machine for tensile and hysteresis testing from 0 to 50 lbs. or 20 kilograms tensile. Recommendation for its use by this textile firm with associations at opposite sides of the globe indicates the world status of Scott Testers, and the fact that

**nearly 40% are shipped export**

Outline your testing problem and let us assist with literature and counsel.

\*Trademark

**SCOTT TESTERS, INC.**

70 Blackstone St., Providence, R. I.

Sales Rep. for Ala., Ky., Tenn.; Va.  
(Also Southeastern Service & Repairs)  
SCOTT TESTERS (Southern), INC.  
P. O. Box 834  
Spartanburg, S. C.

Sales Rep. for Sweden  
SVEN ERICSSON & CO.  
Goteborg  
Sweden

REPRESENTATIVES IN FOREIGN COUNTRIES



## "Coloray" Spun Dyed Rayon Staple

	1½ Den. 1-9/16"	3 Den. 2"	4½ Den. 6"	Price per Lb.
(Code numbers for color and denier)				
Black	1404	1419	1425	37¢
Tan	8004	8019	8025	39¢
Medium Brown	8804	8819	8825	39¢
Silver Grey	1004	1019	1025	39¢
Terra Cotta	8204	8219	8225	39¢
Khaki	3004	3019	3025	40¢
Dark Brown	8604	8619	8625	40¢
Slate Grey	0804	0819	0825	43¢
Light Blue	4004	4019	4025	44¢
Sulphur	2004	2019	2025	44¢
Apple Green	5104	5119	5025	45¢
Peacock Blue	4604	4619	4625	46¢
Medium Blue	4204	4219	4225	46¢
Dark Blue	4404	4419	4425	46¢
Hunter Green	5404	5419	5425	49¢
Indian Yellow	2504	2519	2525	49¢
Pink	6004	6019	6025	50¢
Turquoise	4804	4819	4825	50¢
Malachite Green	5204	5219	5225	51¢
Red	7004	7019	7025	56¢

(In addition to the above, Black is also available in:  
1½ den. 1½" (1401) 3 den. 1-9/16" (1416) 4½ den. 2"  
3 den. 1½" (1413) 3 den. 2½" (1420) 4½ den. 4")  
Terms: Net 30 days, f.o.b. LeMoyne, Alabama. Minimum transportation allowed to points in U.S.A. east of Mississippi River.

## The Hartford Rayon Co.

Div. Bigelow-Sanford Carpet Co., Inc.

### Rayon Staple

Effective February 8, 1956

REGULAR				
	1.5 denier Bright			
	1½" and 2" .....	Withdrawn		
VISCALON 44				
	15 denier 3" Dull .....	Withdrawn		
VISCALON 66 (Crimped)				
	8 denier 2" Bright .....	33¢		
	15 denier 3" Bright .....	33¢		
	15 denier 3" Dull .....	33¢		
"KOLORBON"—Solution Dyed Rayon Staple				
	8 Denier Bright	15 Denier Dull	15 Denier Bright	
Cloud Grey .....	45¢	45¢	....	
Sandalwood .....	45¢	45¢	....	
Nutria .....	45¢	45¢	....	
Sea Green .....	45¢	45¢	....	
Mint Green .....	45¢	45¢	....	
Champagne .....	45¢	45¢	....	
Cafe Brown .....	....	....	55¢	
Midnight Black .....	....	....	45¢	
Gold .....	48¢	48¢	....	
Turquoise .....	45¢	45¢	....	
Melon .....	48¢	48¢	....	
Light Blue .....	45¢	45¢	....	
Charcoal Grey .....	45¢	45¢	....	

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

## ACETATE STAPLE and TOW

### Celanese Corp. of America

Current Prices

#### Staple

Celanese Acetate Staple	Bright & Dull
2, 3, 5.5 & 8 Individual Deniers	\$32
12 & 17 Individual Deniers	.33
35 & 50 Individual Deniers	.36
¾" to ¾" cut length (all deniers)—Premium	.03
Variable Acetate Fibers	.30
35 Individual Denier Flat Filament Acetate	.38

#### Tow

Celanese Celatow Acetate	Bright & Dull
2, 3, 5.5 & 8 Individual Deniers	\$34
12 & 17 Individual Deniers	.35
35 & 50 Individual Deniers	.37

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.  
All previous prices withdrawn.

## NON CELLULOSIC YARN

### Allied Chemical and Dye Corporation

Caprolan®†

Effective April 15, 1957

Denier	Fila-ment	Turn/In.	Twist	Type**	Package	1st Grade Price/Lb.	2nd Grade Price/Lb.
200	32	¾	Z	B	Bobbin	\$1.49	\$1.44
210	32	1	Z	HB	Bobbin	1.49	1.44
560	32	1	Z	HB	Aluminum Tube	1.39	1.29
840	136	¾	Z	HBT	Aluminum Tube	1.30	1.20
840	136	¾	Z	HBT	Beams	1.30	1.20

## Heavy Yarn

					Price/Lb.
2100	408	0	O	HB	Paper Tube*
2100	112	0	O	HB	Paper Tube*
2500	408	0	O	HB	Paper Tube*
3360	544	0	O	HB	Paper Tube*
4200	680	0	O	HB	Paper Tube*
4200	224	0	O	HB	Paper Tube*
5000	816	0	O	HB	Paper Tube*
5000	280	0	O	HB	Paper Tube*
5800	952	0	O	HB	Paper Tube*
7500	1224	0	O	HB	Paper Tube*
10000	1632	0	O	HB	Paper Tube*
15000	2448	0	O	HB	Paper Tube*

Terms—Net 30 days.

Prices subject to change without notice.

All prices quoted F.O.B. Shipping Point.

Following are invoiced as a separate item.

Bobbins—45 cents each.

Aluminum Tubes—40 cents each.

Beams—\$220.00 each.

Cradles for Beams—\$53.00.

\* Paper Tubes non-returnable, no charge.

\*\* Type is used to describe luster and tenacity

Lowest freight cost prepaid or allowed east of Mississippi River, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

† Allied Chemical's polyamide fiber.

B—Bright.  
H—High Tenacity.  
T—Heat Stabilized.

## American Enka Corporation

### Nylenka Filament Yarn Prices

Effective December 21, 1956

Denier & Filament	Twist	Luster	Tenacity	Package	Yarn Weight per Package	Price per Pound, Std.	Price per Pound, Sub.
15/1	0.5Z	semi-dull	Normal	Pirn	1 lb.	\$5.25	\$5.00
30/6	0.5Z	semi-dull	Normal	Pirn	2 lb.	2.36	2.21
40/6	0.5Z	semi-dull	Normal	Pirn	2 lb.	2.01	1.81
50/13	0.5Z	semi-dull	Normal	Pirn	2 lb.	1.91	1.76
100/24	0.5Z	semi-dull	Normal	Pirn	2 lb.	1.65	1.60
100/32	0.5Z	semi-dull	Normal	Pirn	2 lb.	1.65	1.60
200/34	0.5Z	bright	Normal	Pirn	2 lb.	1.49	1.44
200/34	0.5Z	bright	Normal	Cone	4 lb.	1.49	1.44
210/34	0.5Z	bright	High	Pirn	2 lb.	1.49	1.44
210/34	0.5Z	bright	High	Cone	4 lb.	1.49	1.44
840/140	0.5Z	bright	High	Pirn	2 lb.	1.30	1.20
840/140	0.5Z	bright	High	Cone	4 lb.	1.30	1.20
840/140	0.5Z	bright	High	Beam	—	1.30	1.20

Pirns charged at \$25 each. Deposit refunded upon return of pirn in good condition. Cones are non-returnable. Beams and cradles are deposit carriers and remain property of American Enka Corporation.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination on or east of the Mississippi River. In prepaying transportation charges, seller reserves the right to select the carrier used.

## The Chemstrand Corp.

Current Prices

Effective December 19, 1956

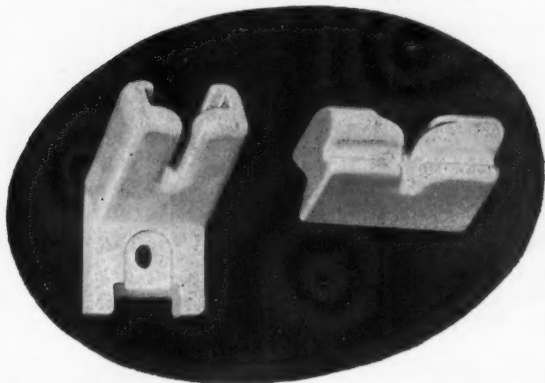
Denier	Filament	Twist	Type*	Package	Standard	Second
10	1	O	SD	Bobbins	\$8.42	\$7.81
15	1	O	SD	Bobbins	5.25	5.00
15	1	O	D	Bobbins	5.30	5.00
15	1	O	D	Spools	5.41	...
30	10	Z	SD	Bobbins	2.36	...
30	10	Z	HSD	Bobbins	2.36	2.21
30	26	Z	SD	Bobbins	2.49	2.21
40	7	Z	SD	Bobbins	2.11	1.75
40	13	Z	SD	Bobbins	2.01	1.81
40	13	Z	SD	Spools	2.11	...
40	13	Z	RD	Bobbins	2.06	1.81
40	13	Z	RD	Spools	2.16	...
50	17	Z	SD	Bobbins	1.91	1.76
70	34	Z	SD	Bobbins	1.71	1.68
70	34	Z	D	Spools	1.71	1.66
70	34	Z	SD	Bobbins	1.86	...
80	26	Z	SD	Bobbins	1.71	1.56
100	34	Z	SD	Bobbins	1.65	1.60
100	34	Z	HB	Bobbins	1.70	1.60
140	68	Z	SD	Bobbins	1.60	1.55
200	34	Z	B	Bobbins	1.49	1.44
200	68	Z	SD	Bobbins	1.56	1.46
210	34	Z	HB	Bobbins	1.49	1.44
210	34	Z	HB	Spools	1.54	...
210	34	Z	HB	Beams	1.54	...
260	17	Z	HB	Bobbins	1.49	1.39
260	17	Z	HB	Spools	1.54	...
420	68	Z	HB	Bobbins	1.39	1.29
630	102	Z	HB	Bobbins	1.39	1.29
840	136	Z	HB	Tubes	1.34	1.24
840	140	Z	HB	Beams	1.30	1.20
840	140	Z	HB	Tubes	1.30	1.20

\*Types: D—Dull; SD Semi-dull; B—Bright; H—High tenacity.

Bobbins are invoiced at 25¢ or 45¢ each, depending on type; tubes are invoiced at 40¢ each; spools invoiced at \$77.00 and \$95.00 depending on type; and beams and crates for beams are invoiced at \$220 and \$25 respectively.

Prices subject to change without notice.

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as the 'room for improvement'.



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### LAMBERTVILLE THREAD GUIDES

have a 'room for improvement'. It's our research laboratory, a room dedicated to constant search for ever better guide materials and manufacturing techniques. It's this room and the people who work there that are responsible for the extra hardness, smoothness and durability of Lambertville guides. Available in white or 'Durablu' finish. Write for catalogue and samples.

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AND MANUFACTURING COMPANY  
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JUNE, 1957

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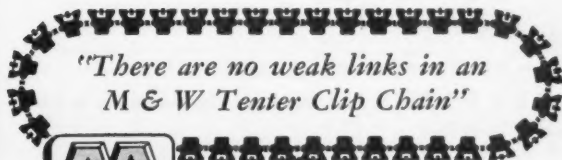
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**M&W** has specialized in engineering, refining and manufacturing Roller Clips since 1940.

**M&W** Clips have all attributes needed for reduced maintenance cost, efficient operation, cloth protection, long chain life, precise performance.

**M&W** Clips are engineered for every type of operation, equipment and fabric.

When buying new or replacement tenter chains, remember these facts and invest in a thoroughly tested, tried and true, product.



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**MARSHALL and WILLIAMS CORPORATION**  
PROVIDENCE, R. I. • GREENVILLE, S. C. • NEW YORK, N. Y.

# E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

## Nylon Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
7-1	0	200	Bobbin	\$9.47	\$8.82
10-1	0	200	Bobbin	8.42	7.82
12-1	0	200	Bobbin	7.35	6.85
15-1	0	200	Tricot Bms.	5.36	5.00
15-1	0	200	Bobbin	5.25	5.00
15-1	0	680	Tricot Bms.	5.41	5.00
15-1	0	680	Bobbin	5.30	5.00
20-1	0	200	Bobbin	4.42	4.12
20-7	0.5Z	200	Bobbin	2.91	2.61
20-7	0.5Z	680	Bobbin	2.96	2.61
20-7	.05	680	Tricot Bms.	3.07	2.61
20-20	0.7Z	209	Bobbin	6.00	5.02
20-7	0.5Z	200	Tricot Bms.	3.02	2.21
30-10	0.5Z	200	Bobbin	2.36	2.21
30-10	0.5Z	200	Tricot Bms.	2.46	2.21
30-10	0.5Z	680	Bobbin	2.41	2.21
30-10	0.5Z	680	Tricot Bms.	2.51	2.21
30-26	0.5Z	200	Bobbin	2.49	2.21
40-7	0.5Z	200	Bobbin	2.11	1.75
40-13	0.5Z	200	Bobbin	2.01	1.81
40-13	0.5Z	200	Tricot Bms.	2.11	1.81
40-13	0.5Z	400	Bobbin	2.13	1.90
40-13	0.5Z	670/680	Bobbin	2.06	1.81
40-13	0.5Z	670/680	Tricot Bms.	2.16	1.81
40-34	0.5Z	200	Bobbin	2.21	1.81
50-17	0.5Z	200	Bobbin	1.91	1.76
50-17	0.5Z	680	Bobbin	2.01	1.76
70-17	0.5Z	200	Bobbin	1.71	1.66
70-34	0.5Z	100/200	Bobbin	1.71	1.66
70-34	0.5Z	300	Bobbin	1.76	1.66
70-34	0.5Z	680	Bobbin	1.76	1.66
80-26	0.5Z	200	Bobbin	1.71	1.56
100-34	0.5Z	200	Bobbin	1.65	1.60
100-34	0.5Z	300	Bobbin	1.70	1.60
100-34	0.5Z	680	Bobbin	1.70	1.60
100-50	0.5Z	200	Bobbin	1.71	1.60
140-68	0.5Z	200	Bobbin	1.60	1.55
140-68	0.5Z	300	Bobbin	1.65	1.55
200-34	0.7Z	100	Bobbin	1.49	1.44
200-34	0.7Z	680	Bobbin	1.54	1.44
200-68	0.7Z	200	Bobbin	1.56	1.46
210-34	0.7Z	300	Bobbin	1.49	1.44
210-34	0.7Z	300	Beam	1.54	1.44
210-34	0.7Z	330	Bobbin	1.59	1.54
260-17	1Z	100/300	Bobbin	1.49	1.39
400-68	0.7Z	100	Bobbin	1.39	1.29
420-68	1Z	300	Bobbin	1.39	1.29
780-51	0.7Z	300	Bobbin	1.39	1.29
800-140	0.5Z	100	Bobbin	1.39	1.29
840-140	0.5Z	300/700	Al. Tbs/Beam	1.30	1.20

## Color-Sealed Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
70-34	0.5Z	140	Bobbin	\$2.06	\$2.01
200-34	0.7Z	140	Bobbin	1.84	1.79
260-17	1Z	140	Bobbin	1.84	1.79

## Industrial Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	Price/Lb.
2520-420	0	300/700	Paper Tube	\$1.27
4200-700	0	300/700	Paper Tube	1.25
5040-840	0	300/700	Paper Tube	1.25
7560-1260	0	300/700	Paper Tube	1.24
10080-1680	0	300/700	Paper Tube	1.24
15120-2520	0	300/700	Paper Tube	1.23

These prices are subject to change without notice. Terms: Net 30 Days.

## Types

- Type 100—Bright, normal tenacity.
- Type 140—Bright, color-sealed, black, normal tenacity.
- Type 200—Semidull, normal tenacity.
- Type 208—Semidull, normal tenacity.
- Type 300—Bright, high tenacity.
- Type 400—Semidull, high tenacity.
- Type 670—Dull, normal tenacity.
- Type 680—Dull, normal tenacity.
- Type 700—Bright, high tenacity.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Following are invoiced as a separate item.  
 Bobbins—25 cents or 45 cents depending on type  
 Aluminum Tubes—40 cents each  
 Tire Cord Beams—\$220.00 each  
 Cradles for Tire Cord Beams—\$115.00 each  
 Tricot Beams—\$95.00 each  
 Cradles for Tricot Beams—\$130.00 each  
 Beams and Cradles are deposit carriers and remain the property of E. I. du Pont de Nemours & Co., Inc.)

## POLYESTER E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

## "Dacron"™

Denier & Filament	Turns/Inch	Luster	Type*	Tubes 1st Gr.
30-20	0	Dull	57	\$2.86
40-27	0	Semidull	56	2.41
40-27	0	Bright	55	2.41
40-27	0	Dull	57	2.46
70-34	0	Semidull	56	\$2.01
70-34	0	Bright	55	2.01
70-34	0	Bright	55	2.01
70-34	0	Dull	57	2.06
100-34	0	Semidull	56	\$1.94
140-28	0	Bright	55	1.89
150-68	0	Semidull	56	1.91
220-50	0	Bright	51	1.84
250-50	0	Bright	55	1.86
1100-250	0	Semidull	59	\$1.50
1100-250	0	Bright	51	1.50

Terms: Net 30 Days.  
 Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

## Yarn Types

\* Type:

- Type 51—Bright, high tenacity.
- Type 55—Bright, normal tenacity.
- Type 56—Semidull, normal tenacity.
- Type 57—Dull, normal tenacity.
- Type 59—Semidull, high tenacity.

Tubes are invoiced as a separate item at \$.70 each. The only exception to this is an \$.80 charge on the tubes used for 30 Denier Dull. All tubes are returnable for credit.  
 \* "DACRON" is DuPont's registered trade-mark for its polyester fiber.

## NON CELLULOSIC STAPLE & TOW ACRYLIC

The Chemstrand Corp.

Current Prices

## "Acrlan"™

2.0 denier Semi-dull staple and tow	\$1.18
2.5 denier Hi-Bulk Bright and Semi-dull staple and tow	1.12
3.0 denier Bright & Semi-dull staple and tow	1.12
5.0 denier Bright & Semi-dull staple and tow	1.12
8.0 denier Bright and Semi-dull staple and tow	1.12

Terms: Net 30 days. Freight prepaid to points east of the Mississippi River.

## Carbide and Carbon Chemicals Co.

Div. Union Carbide and Carbon Corp.

Textile Fibers Dept.

Effective November 1, 1955

## Dynel Staple

Natural Dynel	
3, 6, 12, and 24 Denier, Staple and Tow	\$1.05 per lb.
Whitened Dynel, and Dynel Spun with Light Colors: Blonde, or Gray	
3 and 6 Denier, Staple and Tow	1.20 per lb.
Dynel Spun with Dark Colors: Black, Charcoal, and Brown	
3 and 6 Denier, Staple and Tow	1.30 per lb.

Prices are quoted f.o.b. South Charleston, W. Va.

## E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

## "Orlon"™ Acrylic Staple & Tow

Type 42	1st Grade
1.0 Denier Semidull & Bright—Staple only	\$1.48
2.0 Denier Semidull	1.33
3.0 Denier Semidull & Bright	1.28
3.0 Denier Semidull Color-sealed Black—Staple only	1.63
6.0 Denier Semidull & Bright	1.20
4.5 Denier Semidull	1.20
10.0 Denier Semidull	1.20

Tow—Total Denier 470,000

Staple Lengths—1½", 2", 2½", 3", 4½"

High Shrinkage Staple same price as Regular Staple

Type 39  
 This product is designed for woolen system spinning and is a blend of predominately heavy deniers (average 4.2) with a variable cut length.

F.O.B. Shipping Point—Freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Terms: Net 30 Days.

\*\* "ORLON" is DuPont's registered trade-mark for its acrylic fiber.

## Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Effective November 15, 1956

## "Verel"™

Deniers	Dull and Bright
2, 3, 5 and 8	\$1.10 per pound

Prices are subject to change without notice.  
 Terms: Net 30 days. Payment—U. S. A. dollars.  
 Transportation charges prepaid or allowed to destination in the United States east of the Mississippi River. Seller reserves the right to select route and method of shipment. If buyer requests and seller agrees to a route or method involving higher than lowest rate buyer shall pay the excess of transportation cost and tax.  
 \* "Verel" is a trade-mark of the Eastman Kodak Co.

## NYLON

American Enka Corp.

## Nylenka (Nylon Six Staple)

Denier	Luster	Length (Inches)	Price per pound
3	semi-dull	1½, 1½, 2, 2½, 3, 4½	\$1.28
6	bright	3, 4½	1.28
8	bright	2½	1.20
10	bright	3	1.20
15	bright	3	1.20

Deniers and lengths of staple not listed above are available upon special request.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination on or east of the Mississippi River. In prepaying transportation charges, seller reserves the right to select the carrier used.

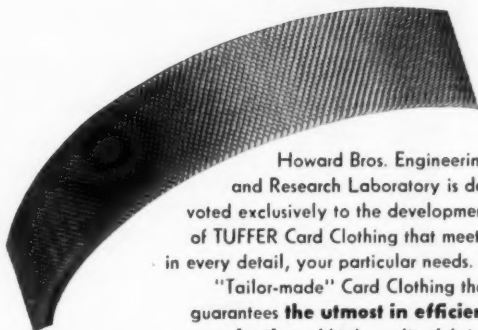




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## The Laurel Leaf

BUSINESS MAGAZINE EDITION



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The new coning oil — tailor-made for Banlon producers — provides unexcelled lubrication for your yarn, oils the fibres smoothly and evenly, helping you maintain a steady, high-quality production. Its superior lubrication, combined with more potent antistatic properties, effectively reduces snagging and pulling of the yarn, allowing it to run more easily off the cones. For better **lubrication** . . . it's RUXITE B.

Tests have proven this new oil protects yarn from undue stress and strain. Hence, yarns safeguarded with this oil can never cause tight stitches and puckers in finished garments. For better **protection** . . . it's RUXITE B.

A coning oil that is light in color and mild in odor, it will not settle out in drum or trough. Every ounce is put to work for you. And, what's more, it's extremely resistant to the efforts of high temperatures which often are encountered in presetting and in extended storage. You'll find that yarn keeps its resilience—has a longer life. For better **heat resistance** . . . it's RUXITE B.

Finally, everything about the new oil is easy—on your yarn, the finished garments, and on you. . . It's applied at room temperature from oiling troughs of standard coning or winding machines. It has a low viscosity which shows little variation with temperature, making easy maintenance of uniform pick-up on the yarn. And, it's removed from finished garments in a simple cold scour using a mild detergent. For **ease of handling** . . . it's Ruxite B.

You owe it to yourself to try this splendid new coning oil. A free sample—and further information—is yours for the asking. Write TODAY, without obligation, for RUXITE B.



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## E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

### Nylon Staple and Tow

Denier	Type	Staple Lengths	Tow Bundle	Price/Lb.
1.5	200	1 1/2"-4 1/2"	None made	\$1.33
1.5	201	1 1/2"-4 1/2"	None made	1.35
3.0	100/200	1 1/2"-4 1/2"	430M	1.28
3.0	101/201	1 1/2"-4 1/2"	455M	1.30
6.0	100	1 1/2"-4 1/2"	330M	1.28
6.0	101	1 1/2"-4 1/2"	345M	1.30
15.0	100	1 1/2"-6 1/2"	330M	1.20
15.0	101	1 1/2"-6 1/2"	None made	1.22

Staple lengths are restricted to the range shown opposite each denier above. The actual cut lengths within these ranges are as follows:

1 1/2, 1 3/4, 2, 2 1/4, 3, 4 1/2 and 6 1/2

### Types

Type 100 Bright, normal tenacity, not crimpset.

Type 101 Bright, normal tenacity, crimpset.

Type 200 Semidull, normal tenacity, not crimpset.

Type 201 Semidull, normal tenacity, crimpset.

These prices are subject to changes without notice.

Terms—Net 30 Days.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

## Industrial Rayon Corp.

Effective November 29, 1956

### Nylon Staple

1.5 denier	\$1.33 per lb.
2, 3 and 6 denier	1.28 per lb.
8 and 15 denier	1.20 per lb.

Bright and semi-dull, required length.

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points east of the Mississippi River.

## POLYESTER

## E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

### "Dacron"® Staple and Tow

Denier	Luster	Type	Length	Tow Bundle	1st Gr.
1.25	Semidull	54	1 1/4"-3"	.....	\$1.56
1.5	Semidull	54	1 1/4"-3"	.....	1.51
3.0	Semidull	54	1 1/4"-4 1/2"	375M-500M	1.41
4.5	Semidull	54	1 1/4"-4 1/2"	375M-500M	1.41
6.0	Semidull	54	1 1/4"-4 1/2"	375M-500M	1.41

Terms: Net 30 Days.

F. O. B. Shipping Point—Freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

## POLYVINYL ACETATE

## American Viscose Corp.

Effective October 1, 1956

### "Vinyon"® Staple

3.0 denier	1/2" unopened	\$.80 per lb.
3.0 "	1 1/4" unopened	.80 per lb.
3.0 "	1 1/4" opened	.90 per lb.
3.0 "	2" opened	.90 per lb.
3.0 "	2" unopened	.80 per lb.
5.5 "	1" opened	.90 per lb.
5.5 "	3 1/2" opened	.90 per lb.
5.5 "	3 1/2" unopened	.80 per lb.

Terms: Net 30 days.

## PROTEIN

## Virginia-Carolina Chemical Corp.

Fiber Division

Effective January 15, 1951

### "Vicara" Staple

3 Denier	Standard Crimp	Highly Crimped
3 Denier	\$1.00 per lb.	\$1.05 per lb.
5 Denier	1.00 per lb.	1.05 per lb.
7 Denier	1.00 per lb.	1.05 per lb.

### Bleached "Vicara" Staple

3 Denier	Standard Crimp	Highly Crimped
3 Denier	\$1.10 per lb.	\$1.15 per lb.
5 Denier	1.10 per lb.	1.15 per lb.
7 Denier	1.10 per lb.	1.15 per lb.

Staple length 1/2 to 6 in.

Supplied in staple lengths or as continuous tow (270,000 filaments).

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BUSINESS SERVICE

SECTION

# STOP!

Before you close this Issue  
Turn to Page 36

## Calendar of Coming Events

Jun. 5—AATT monthly meeting. Hotel Vanderbilt, New York, N. Y.  
 Jun. 7-9—AATCC Piedmont Section annual outing. Mayview Manor, Blowing Rock, N. C.  
 Jun. 14—AATCC Western New England Section. Wallingford, Conn.  
 Jun. 14—AATCC Rhode Island Section outing. Warwick Country Club, Rocky Point, R. I.  
 Jun. 16-21—ASTM 60th annual meeting. Chalfonte-Haddon Hall, Atlantic City, N. J.  
 Jun. 20-22—Southern Textile Association annual convention. Ocean Forest Hotel, Myrtle Beach, S. C.  
 Jun. 21—AATCC Hudson-Mohawk Section outing. Antlers Country Club, Amsterdam, N. Y.  
 Sep. 4-6—Fiber Society and Textile Institute meeting. Hotel Statler, Boston, Mass.  
 Sep. 26-28—Combed Yarn Spinners Association annual meeting. The Cloister, Sea Island, Ga.

Sep. 27-28—Carded Yarn Association annual meeting. The Cloister, Sea Island, Ga.  
 Sep. 28—Textile Operating Executives of Georgia fall meeting. Georgia Institute of Technology, Atlanta, Ga.  
 Oct. 2-3—National Cotton Council of American Chemical Finishing Conference. Hotel Statler, Washington, D. C.  
 Oct. 10-11—Southern Textile Methods & Standards Association fall meeting. Clemson House, Clemson, S. C.  
 Oct. 12—Textile Operating Executives of Alabama fall meeting. Thach Auditorium, Auburn, Ala.  
 Oct. 28-31—National Industrial Packaging and Handling Exposition. Convention Hall, Atlantic City, N. J.  
 Nov. 14-16—AATCC National Convention and Exhibition. Hotel Statler, Boston, Mass.

## Index to Advertisers

(\*See previous or subsequent issues)

Acrometal Products, Inc.  
 Allentown Bobbin Works, Inc. 81  
 Allied Chemical & Dye Corp.  
     National Aniline Div. 19, 43  
     Nitrogen Division  
     Solvay Process Division  
 Althouse Chemical Co.  
 American Aniline Products, Inc. 35  
 American Bemberg 20  
 American Enka Corp.  
 American Lava Corp. IV Cover  
 American Moistening Company  
 American Viscose Corp. 16  
 Antara Chemicals Div. General  
     Dyestuff Corp. 11  
 Apex Chemical Company, Inc.  
 Arkansas Co., Inc. 7  
 Atkinson, Haserick & Co., Inc.  
 Atlantic Rayon Co.  
 Atlas Electric Devices Co. \*

Baker & Company, Inc.  
 Barber-Colman Co.  
 Birch Bros., Inc.  
 Booth, Benjamin Co.  
 Borregaard Co., Inc., The 94  
 Butterworth & Sons Co., H. W.

Carbide & Carbon Chemicals Co.  
     A Division of Union Carbide  
     & Chemical Corp.  
     Textile Fibers Dept.  
 Carter, A. B., Inc.  
 Celanese Corp. of America,  
     Yarn Div. 39  
 Ciba Company, Inc.  
 Chemstrand Corp. 22, 23  
 Cocker Machine & Foundry Co.  
 Collins Supply and Equipment  
     Co. 81  
 Columbia-Southern Chem. Corp.  
 Corn Products Sales Co.  
 Cosa Corporation 8  
 Courtaulds (Alabama), Inc. 85  
 Crompton & Knowles Loom  
     Works  
 Curtis & Marble Machine Co.

Dary Ring Traveler Co. 87  
 Davison Publishing Co.  
 Dayton Rubber Co., The  
 Denman Textile Rubber Co. 3  
 Dobson & Barlow, Ltd. II Cover  
 Draper Corporation  
 Du Pont de Nemours & Co., E. I.  
     Dyestuff Department  
     Textile Fiber Department 37  
     Film Department

Eastman Chem. Pro. Inc.  
 Edda International Corp.  
 Emery Industries, Inc.  
 Engineered Plastics, Inc.

Fancourt Co., W. F. 51  
 Foster Machine Co. 10  
 Frankl Associates, Ernest L.

Gaston County Dyeing Machine  
     Co. 77  
 Geigy Chemical Corp. 45  
 General Dyestuff Corp.  
 Gessner Company, David  
 Globe Dye Works Co.

Hart Products Corp.  
 Hartford Machine Screw Co. 49  
 Hartford Rayon Co., Div. of Bige-  
     low-Sanford Carpet Co., Inc. 6  
 Hayes Industries, Inc.  
 Heany Industries Ceramic Co. 83  
 Heresite & Chemical Co. III Cover  
 Herr Mfg. Co., Inc.  
 Hoffman & Co., Inc., Arnold 47  
 Hoffner Rayon Co. 75  
 Howard Bros. 89

Ideal Industries, Inc.  
 Industrial Rayon Corp. 14, 15, 25  
 Instron Engineering Corp.  
 Interchemical Corp.

Jacobs, E. H., Northern &  
     Southern Division 75  
 Johnson Corp., The

Kenyon Piece Dyeworks, Inc. 62  
 Kiddie Manufacturing Co., Inc. 59  
 Knitting Arts Exposition

Lambertville Ceramic & Mfg.  
     Co. 87  
 Laurel Soap Mfg. Co. 89  
 Lindly & Co., Inc.  
 Loper Company, Ralph E.

Malina Company  
 Marshall and Williams Corp. 81  
 McBride Co., Edward J. 76  
 Metlon Corp.  
 Milton Machine Works, Inc.  
 Mitchell-Bissell Co. 57

Nash, J. M. Co.  
 National Drying Machinery Co.  
 National Ring Traveler Co.  
 National Vulcanized Fibre Co.  
     Lestershire Spool Div. 87  
 New Departure, Div. of Gen.  
     Motors  
 New England Bobbin & Shuttle  
     Co.  
 New York & New Jersey  
     Lubricant Co.  
 Nopco Chemical Co.

Olin Mathieson Chem. Co. 26

Penick & Ford, Ltd.  
 Pneumafil Corp.  
 Proctor & Schwartz, Inc. 74

Red Ray Mfg Co.  
 Reiner, Inc., Robert  
 Reliable Sample Card Co., Inc.  
 Riggs & Lombard, Inc.  
 Riordon Sales Corp., Ltd. 24  
 Roberts Company

Saco-Lowell Shops 12  
 Sandoz Chemical Works, Inc.  
 Sayles Finishing Plants, Inc.  
 Scholler Bros.  
 Scott & Williams Inc. 9  
 Scott Testers, Inc. 85  
 Simco Co., The  
 Sirrine Co., J. E.  
 Sonoco Products Co. 4  
 Southern Shuttle Div.,  
     Steel Heddle Mfg. Co. 21  
 Standard Chemical Products, Inc.  
 Stanley Works—Magic Door Div.  
 Stauffer Chemical Company 13  
 Steel Heddle Mfg. Co. 21  
 Stein Hall  
 Synthane Corp. 41

Taylor-Stiles & Co.  
 Tennessee Corp.  
 Textile Hall Corp.  
 Timron Development & Mfg.  
     Corp. 83  
 Titanium Pigment Corp. 89  
 Traphagen School of Fashion 90  
 Trumeter Co. 28  
 Turbo Machine Co.

United Piece Dye Works, The  
 U. S. Ring Traveler Co.  
 U. S. Textile Machine Co. 17  
 Universal Winding Co. 18  
 Uster Corp.

Van Vlaanderen Machine Co.  
 Veeder-Root, Inc.  
 Victor-Ring Traveler Co.  
 Virginia-Carolina Chemical  
     Corp.  
 Von Kohorn International Corp.

Wallerstein Company, Inc. 79  
 Walton & Lonsbury  
 Watson-Williams Mfg. Co.  
 West Point Foundry & Mach. Co.  
 Whitin Machine Works 27  
 Whitinsville Spinning Ring Co. 90

## BUSINESS SERVICE

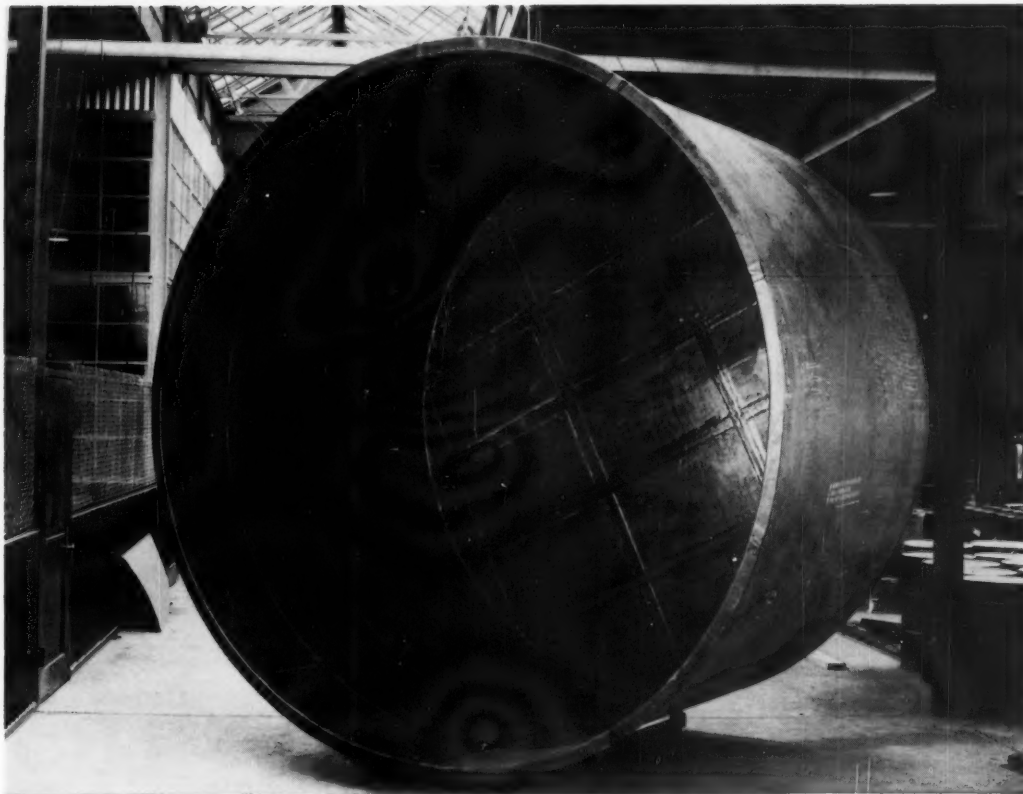
Charles P. Raymond Service, Inc. 91  
 The Yarn Exchange, Inc. 91  
 Altex Sales, Inc. 91  
 Sidney Bertner Co. 91  
 Waumbec Mills, Inc. 91  
 Louis Newmark, Ltd. 91



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